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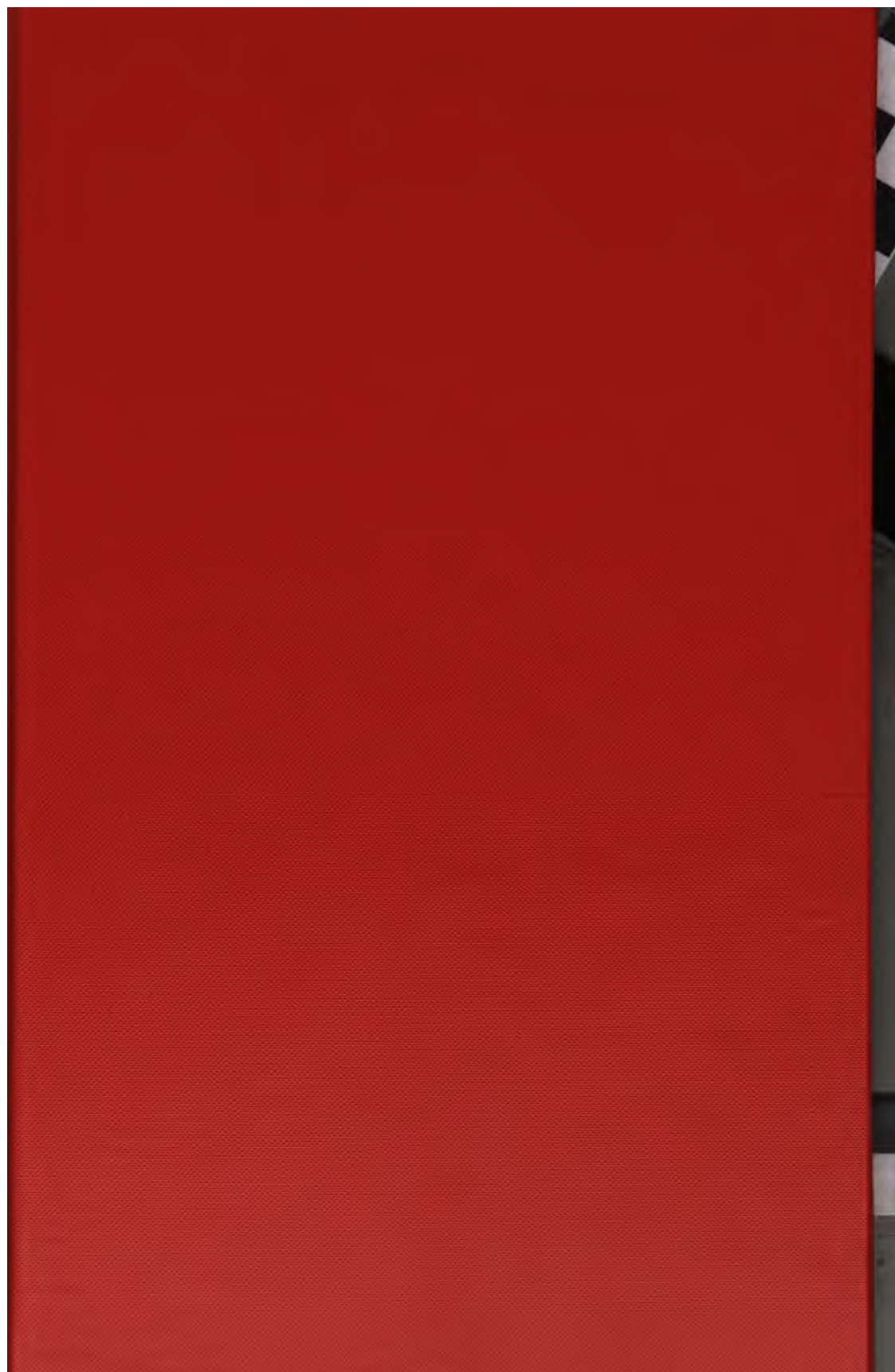
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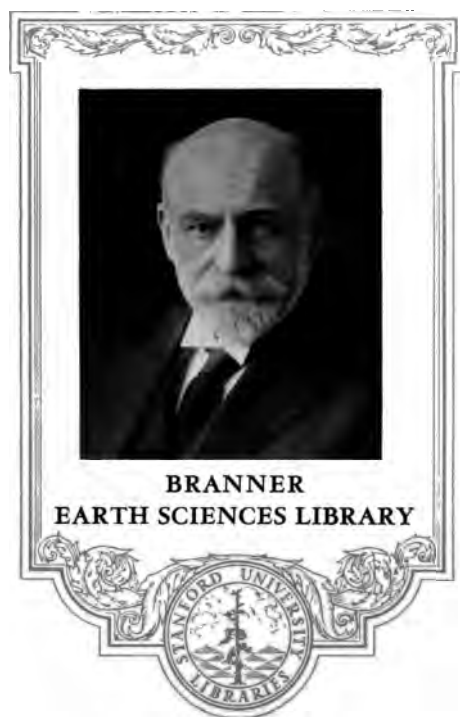
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DEPARTMENT OF THE INTERIOR.
UNITED STATES GEOLOGICAL SURVEY OF THE TERRITORIES.
F. V. HAYDEN, U. S. GEOLOGIST.

MISCELLANEOUS PUBLICATIONS, No. 10.

BIBLIOGRAPHY
OF
NORTH AMERICAN
INVERTEBRATE PALEONTOLOGY,

BEING A

REPORT UPON THE PUBLICATIONS THAT HAVE HITHERTO BEEN
MADE UPON THE INVERTEBRATE PALEONTOLOGY OF
NORTH AMERICA, INCLUDING THE WEST
INDIES AND GREENLAND.

BY

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PREFATORY NOTE.

U. S. GEOLOGICAL AND GEOGRAPHICAL
SURVEY OF THE TERRITORIES,
Washington, D. C., January 1, 1878.

This Bibliographical Record has been prepared for the purpose of conveying to the public a brief general view of the work that has hitherto been done in the Invertebrate Paleontology of North America, and also of furnishing students and investigators with a ready index to the works of all the authors who have made contributions to it.

The fundamental value of paleontological research in connection with every geological survey renders it desirable to extend all practicable facilities for its prosecution.

Part I of this work has been prepared by Dr. C. A. White, the Paleontologist of the Survey, and comprises the publications that have been made within the limits of the United States.

Part II has been prepared by Prof. H. Alleyne Nicholson, of the University of St. Andrews, Scotland, and comprises the publications that have been made upon the subject herein embraced outside the limits of the United States. Professor Nicholson's extensive acquaintance with this subject, and the important part he has taken in paleontological research in North America, render this contribution especially acceptable.

It is gratifying to note that so important a part of the paleontological research which is indicated in this record has been accomplished in connection with the Geological Survey under my direction during the few years that it has been in existence; and yet the field for future labor of this kind, in the same connection, is practically unlimited. Every year's explorations bring to light not only new specific forms, but also new and

4 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

important facts bearing both upon the geological and biological history of the continent.

It is expected that additions to this work will appear annually in some of the publications of the Survey, so that a continuous record may be kept of the progress of the science in North America.

F. V. HAYDEN,
United States Geologist.

**BIBLIOGRAPHY OF NORTH AMERICAN INVERTEBRATE
PALEONTOLOGY.**

PART I.

**EMBRACING TITLES AND ABSTRACTS OF PUBLICATIONS MADE
IN THE UNITED STATES.**

By C. A. WHITE, M. D.

PREFACE TO PART I.

A number of difficulties have arisen in the course of the preparation of this work, which, being common to all works of the kind, are only mentioned that the author may not seem to have been unmindful of them.

Many of the publications that have been consulted are only in part devoted to the subject in hand; but the aim has been to record every publication that contains a real contribution to the science, however slight, whether of recorded fact or philosophical discussion. Thus, all purely geological writings have been excluded; but it has not always been easy to draw the line in this regard. Local lists of fossils, and lists given in geological writings merely to characterize the formations there under discussion, have also been excluded; but classified lists involving the relations of zoological groups have been included.

Again, many of the publications consulted embrace a description or discussion of both recent and fossil forms; but a single fossil species has been thought sufficient to entitle the work containing it to a place in this record.

Furthermore, many of the genera and higher groups which include some of the fossil species are found diagnosed or discussed only or mainly in works devoted to living species. Therefore the subject has been left somewhat incomplete in this respect; but the line must be drawn somewhere, and it has been thought best to include only those publications that treat, at least in part, of fossil species.

The scope of this compilation is primarily restricted to those works which treat, either wholly or in part, of invertebrate fossils found within the limits of North America, including the West Indies and Greenland; but, for convenience, the comparatively few contributions that citizens of the United States have made to the paleontology of other countries, and published in their own, have been also included in Part I.

The compiler has not felt it necessary to make any discrimination as to the relative value of the publications recorded; but he has endeavored to include even the most obscure and rare, if they have been properly published.

8 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

The scope of each separate entry has been a matter of much consideration. It is impracticable to make an extended abstract of each publication in a report like this; and if it were not, such abstracts could not obviate the necessity of the student to consult the full original text. Therefore, only a brief indication of the character of the contents is given in each case, except that a list of the genera therein diagnosed, either originally or otherwise, is included in the entry, no distinction being made in the entry between genera and subgenera. A list of the species is also given in the case of obscure publications; but they are omitted from those that one naturally expects to find in all good libraries. A very large proportion of the publications entered consists wholly of descriptions, no abstract of which is practicable, and it has been a custom among American writers to make the titles of their publications so full as to amount to a brief abstract of their work.

The arrangement of the entries is by authors, in the alphabetical order of their names, and subordinately by dates. The year only is given, although some of the works indicate the month of their publication, and in the case of others the exact year of publication is uncertain. As a rule, the date of the title-page is given as the date of publication; but this has been varied from in a few cases, according to the personal knowledge of the compiler, or attention is called to the discrepancy in an appended note.

While no publication that would come properly within the scope of this work has been intentionally omitted, it is not unlikely that some have been overlooked; but it is expected that annual additions and corrections will be made in some of the publications of the Survey. The publications that are most likely to have been overlooked are "extra copies" or advance sheets of articles that afterward appeared in some of the scientific periodicals. Usually, exact date of publication only is involved in such cases, but sometimes the regular edition contains changes or modifications that are more or less important. However, the cases of such omission are believed to be very few that would involve the exclusion of any fact or idea that has been advanced by any author.

The compiler would esteem it a favor if those into whose hands this work may fall would promptly inform him of any error or omission, that it may be subsequently corrected.

C. A. W.

WASHINGTON, D. C., *January 1, 1878.*

I.—PUBLICATIONS MADE IN THE UNITED STATES.

Anon. Correspondence of J. Barrande, W. E. Logan and James Hall. "On the Taconic system and the age of the fossils found in the rocks of Northern New England, and the Quebec group of rocks." < *Am. Journ. Sci.*, vol. xxxi, 2d ser., pp. 210-226. 1861.

Anthony, J. G. New Trilobites. < *Am. Journ. Sci.*, vol. xxxiv, 1st ser., pp. 379, 380, 1 woodcut. 1838.

Ceratocephalus ceralepta.

Anthony, J. G. Description of a new fossil (*Calymene bucklandi*). < *Am. Journ. Sci.*, vol. xxxvi, 1st ser., pp. 106, 107, 2 woodcuts. 1839.

Anthony, J. G., U. P. James, G. Graham, and. See James, U. P. 1846.

Atwater, Caleb. On some ancient human bones, &c., with a notice of the bones of the Mastodon, or Mammoth, and of various shells found in Ohio and the West. < *Am. Journ. Sci.*, vol. ii, 1st ser., pp. 242-246, 1 plate. 1820.

Terebratulula (Spirifer) pennata is figured and described.

Bailey, J. W. On fossil Infusoria, discovered in peat-earth, at West Point, N. Y.; with some notices of American Diatomæ. < *Am. Journ. Sci.*, vol. xxxv, 1st ser., pp. 118-124, 1 plate. 1839.

Bailey, J. W. Notice of American Polythalamia from the Upper Mississippi, and also from the Cretaceous formation of the Upper Missouri. < *Am. Journ. Sci.*, vol. xli, 1st ser., pp. 400, 401, 4 woodcuts. 1841.

Bailey, J. W. A sketch of the Infusoria of the family Bacillaria, with some account of the most interesting species which have been found in a recent or fossil state in the United States. < *Am. Journ. Sci.*, vol. xlii, 1st ser., pp. 88-105, 2 plates. 1842.

Also published in *Trans. Asso. Am. Nat. & Geol.*, vol. i, pp. 112-164.

Bailey, J. W. A sketch of the Infusoria, of the family Bacillaria, with some account of the most interesting species which have been found in a recent or fossil state in the United States. < *Trans. Assoc. Am. Nat. & Geol.*, vol. i, pp. 112-164, 1 plate. 1843.

Also published in *Am. Journ. Sci.*, vol. xlii, 1st ser. (1842), pp. 88-105, with 2 plates.

Bailey, J. W. Infusoria. < *Mather's Report on the Geology of the First District, New York*, pp. 48-79. 1843.

This article is mainly a reproduction of those that had been previously published both in the *Am. Journ. Sci.*, and as above cited. The author presents a systematic classification of the Infusoria, both fossil and living.

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Bailey, J. W. Account of some new Infusorial forms discovered in the fossil Infusoria from Petersburg, Va., and Piscataway, Md. < *Am. Journ. Sci.*, vol. xlv, 1st ser., pp. 137-141, 1 plate. 1844.

Bailey, J. W. Notice of some new localities of Infusoria, fossil and recent. < *Am. Journ. Sci.*, vol. xlviii, 1st ser., pp. 321-343, 1 plate. 1845.

This article embraces much more than its title would imply. It not only includes much of the author's original investigations, but much that had been done by Ehrenberg. Among other matter, several new genera and species are described.

Bailey, J. W. New localities of Infusoria in the Tertiary of Maryland. < *Am. Journ. Sci.*, vol. vii, 2d ser., p. 437. 1849.

Bailey, J. W. Miscellaneous notices. < *Am. Journ. Sci.*, vol. xi, 2d ser., pp. 85, 86. 1851.

Among these "notices" are those of the occurrence of fossil *Infusoria* in the Southern rice-fields, in Maryland, and in Florida.

Bailey, J. W. On some new localities of fossil Diatomaceæ in California and Oregon. < *Am. Journ. Sci.*, vol. xvii, 2d ser., pp. 179, 180. 1854.

Barrett, S. T. Description of a new Trilobite. < *Am. Journ. Sci.*, vol. xi, 3d ser., p. 200. 1876.

Billings, E. Note on Conocephalites. Addendum to "Description of a new Trilobite from the Potsdam Sandstone," by F. H. Bradley. < *Am. Journ. Sci.*, vol. xxx, 2d ser., pp. 242, 243. 1860.

Also, as "Additional note on the Potsdam fossils" on pp. 337, 338, of the same volume.

Billings, E. I. On some new or little known species of Lower Silurian fossils from the Potsdam group (Primordial zone). < *Geology of Vermont*, vol. ii, pp. 942-955. II. On some new species of fossils from the Califerous, Chazy, Black River, and Trenton formations. < *Ibid.*, pp. 955-960. 1861.

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Billings, E. Further observations on the age of the Red Sandrock formation (Potsdam group) of Canada and Vermont. < *Am. Journ. Sci.*, vol. xxxiii, 2d ser., pp. 100-105. 1862.

This is a continuation of the author's observations in vol. xxxii, p. 232.

Billings, E. On the genus *Centronella*, with remarks on some other genera of Brachiopoda. < *Am. Journ. Sci.*, vol. xxxvi, 2d ser., pp. 236-240. 1863.

In this paper, the author republishes the diagnoses of both *Centronella*, Billings, and *Cryptonella*, Hall.

Billings, E. Description of some new species of fossils, with remarks on others already known, from the Silurian and Devonian rocks of Maine. < *Proc. Portland Soc. Nat. Hist.*, vol. i, pp. 104-126. 1863.

Billings, E. Note on the structure of the Blastoidæ. < *Am. Journ. Sci.*, vol. xlvii, 2d ser., p. 353. 1869.

In this note, the author points out the differences and similarities between the genera *Nucleocrinus*, *Pentremites*, and *Codaster*, especially with regard to the function of the summit openings.

- Billings, E.** Notes on the structure of the Crinoidea, Cystidea and Blastoida. < *Am. Journ. Sci.*, vol. xlviii, 2d ser., pp. 69-83. 1869. Continued in vol. xlix, pp. 51-58, and in vol. l, pp. 225-240. 1869.

This series of articles comprises an extended discussion of the structure and functions of different parts of those Echinoderms.

- Billings, E.** Fossils from the so-called Huronian of Newfoundland. < *Am. Journ. Sci.*, vol. iii, 3d ser., pp. 223, 224. 1872.

A brief abstract of a paper by Mr. Billings read before the Natural History Society of Montreal, January, 1872.

- Billings, E.** Fossils probably of the Chazy era in the Eolian limestone of West Rutland, Vt. < *Am. Journ. Sci.*, vol. iv, 3d ser., p. 133. 1872.

- Billings, E.** On the structure of *Obolella chromatica*. < *Am. Journ. Sci.*, vol. xi, 3d ser., pp. 176-178. 1876.

The author here gives more extended and complete descriptions of generic and specific characters than were allowed by the only specimens discovered at the time his original descriptions were published.

- Bigsby, J. J.** Description of a new species of Trilobite. < *Journ. Acad. Nat. Sci. Phila.*, vol. iv, 1st ser., pp. 365-368, 1 plate. 1825.

- Bouvé, T. T.** Description of *Pygorhynchus gouldi*, a new Echinus from the Millstone Grit of Georgia. < *Am. Journ. Sci.*, vol. iii, 2d ser., p. 437. 1846.

The rock from which this fossil comes is Tertiary, not Carboniferous. The description is also published in *Proc. Bost. Soc. Nat. Hist.*, vol. ii, pp. 192, 193.

- Bouvé, T. T.** Description of *Pygorhynchus gouldii* from the Millstone Grit of Georgia. < *Proc. Bost. Soc. Nat. Hist.*, vol. ii, pp. 192, 193. 1847.

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- Bradley, Frank H.** Description of a new Trilobite from the Potsdam Sandstone, with a note by E. Billings. < *Am. Journ. Sci.*, vol. xxx, 2d ser., pp. 241-243. 1860. Republished, as in next entry.

- Bradley, Frank H.** Description of a new Trilobite from the Potsdam Sandstone, with a note by E. Billings. < *Proc. Am. Assoc. Adv. Sci.*, vol. xiv, pp. 161-166, 3 woodcuts. 1861.

- Bradley, Frank H.** Description of two new Land Snails from the Coal-measures. < *Am. Journ. Sci.*, vol. iv, 3d ser., pp. 87, 88, 2 woodcuts. 1872.

- Browne, Peter A.** Some notice of the fossil Cephalopodes *belemnosepia*, long known by the name of "Belemnite", and of the diphosphate of iron, called "Mullicite", found together at Mullica Hill. < *Proc. Am. Assoc. Adv. Sci.*, vol. i, pp. 13-16. 1849.

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Conrad, T. A. On the geology and organic remains of a part of the peninsula of Maryland, with an "Appendix containing descriptions of twenty-nine new species of fossil shells, noticed in the preceding paper". < *Journ. Acad. Nat. Sci. Phila.*, vol. vi, 1st ser., pp. 205-230, 2 plates. 1830.

Conrad, T. A. Description of fifteen new species of recent and three of fossil shells, chiefly from the coast of the United States. < *Journ. Acad. Nat. Sci. Phila.*, vol. vi, 1st ser., pp. 256-268, 1 plate. 1830.

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Conrad, T. A. Fossil shells of the Tertiary formations of North America, vol. i, pp. 56, 16 plates, 8°, Philadelphia. 1832. Also, in pamphlet form, No. 3, pp. 10, and No. 4, pp. 8, of vol. i.

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Conrad, T. A. Observations on the Tertiary and more recent formations of a portion of the Southern States. < *Journ. Acad. Nat. Sci. Phila.*, vol. vii, 1st ser., pp. 116-129; together with an "Appendix,—Descriptions of new Tertiary fossils from the Southern States", pp. 130-157. 1834.

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Conrad, T. A. Report on the paleontological department. < *Ann. Rep. Geol. Surv. N. Y.*, vol. ii, pp. 107-119. 1838.

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 < *Ann. Rep. Geol. Surv. N. Y.*, vol. iv, pp. 199-207. 1840.

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Conrad, T. A. Appendix to "Observations on the Secondary and Tertiary formations of the Southern Atlantic States, by James T. Hodge".
 < *Am. Journ. Sci.*, vol. xli, 1st ser., pp. 332-348, 1 plate. 1841.

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Conrad, T. A. Descriptions of twenty-six new species of fossil shells discovered in the Medial Tertiary deposit of Calvert Cliffs, Maryland.
 < *Proc. Acad. Nat. Sci. Phila.*, vol. i, pp. 28-33. 1841.

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Conrad, T. A. Fifth (fourth?) annual report on the paleontological department. < *Ann. Rep. Geol. Surv. N. Y.*, vol. v, pp. 25-57. 1841.

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Conrad, T. A. Descriptions of new genera and species of organic remains.
 < *Ann. Rep. Geol. Surv. N. Y.*, pp. 48-57. 1841.

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Conrad, T. A. Description of twenty-four new species of fossil shells, chiefly from the Tertiary deposits of Calvert's Cliffs, Maryland. < *Journ. Acad. Nat. Sci. Phila.*, vol. viii, 1st ser., pp. 183-190. 1842.

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Conrad, T. A. Observations on a portion of the Atlantic Tertiary region, with a description of new species of organic remains. < *2d Bulletin, Proc. Nat. Inst. Prom. Sci. Washington, D. C.*, pp. 171-194, 2 plates. 1842.

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Conrad, T. A. Descriptions of eight new fossil shells of the United States. < *Proc. Acad. Nat. Sci.*, vol. ii, pp. 173-175. 1844.

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Conrad, T. A. Observations on the Eocene formation of the United States, with descriptions of species of shells, &c., occurring in it. < *Am. Journ. Sci.*, vol. i, 2d ser., pp. 209-221, 2 plates. 1846.

Conrad, T. A. Tertiary of Warren County, Mississippi. < *Am. Journ. Sci.*, vol. ii, 2d ser., pp. 124, 125. 1846.

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Conrad, T. A. Descriptions of new species of organic remains, from the Upper Eocene limestone of Tampa Bay. < *Am. Journ. Sci.*, vol. ii, 2d ser., pp. 399, 400, 9 woodcuts. 1846.

Conrad, T. A. Descriptions of new species of fossil and recent shells and corals. < *Proc. Acad. Nat. Sci. Phila.*, vol. ii, pp. 19-27, 1 plate. 1846.

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Conrad, T. A. Observations on the Eocene formation, and descriptions of one hundred and five new fossils of that period, from the vicinity of Vicksburg, Mississippi; with an appendix. < *Proc. Acad. Nat. Sci. Phila.*, vol. iii, pp. 280-299. 1847.

This article is republished in the *Journ. Acad. Nat. Sci. Phila.*, vol. i, 2d ser., pp. 111-134, and illustrated with 4 plates. (See second entry below.)

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Lower Silurian. Genera *Echino-encrinurus* (H. von Meyer), *Tellinomya*, *Modiolopsis*, *Ambonychia*, *Holopea*, *Subulites* (Conrad), *Carinaropsis*, *Oncoceras*, *Cameroeras* (Conrad), *Platynotus* (Conrad), *Thaleops* (Conrad), *Sphenothallus*, *Favistella*, *Discophyllum*, *Heterocrinus*, *Glyptocrinus*, *Scolithus* (Hald.), *Paleophycus*, *Buthotrepsis*, *Ophileta* (Vanuxem), *Streptoplasma*, *Raphistoma*, *Bucania*, *Phytopsis*, *Stromatocentrum*, *Goniceras*, *Endoceras*, *Escharopora*, *Stictopora*, *Stellipora*, *Schizocrinus*, *Scyphocrinus*, *Lyrodasma* (Conrad).

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Carboniferous.

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In these notes, the genus *Pholadops* is amended, the horizon of *Goniolites pattersoni*, as given on page 99 of the 13th Ann. Rep., corrected, and an explanation given concerning the title of an article on page 113 of 13th Ann. Rep.

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The first ten pages of this pamphlet are a reprint of the preceding article. The nine following pages of the pamphlet are new, and contain descriptions of the following species, besides the genus *Heterocidaris* and subgenus *Lepidechinus*:—*Actinocrinus carica*, *A. ovatus*, *A. multibrachiatus*, *A. lucina*, *A. thetis*, *A. thoas*, *A. quaternarius*, *A. themis*, *A. remibrachiatus*, *A. tenuiradiatus*, *A. eryz*, *A. erodus*, *A. insculptus*, *A. althea*, *A. lagena*, *A. thallia*, *A. matula*, *A. attenuata*, *A. tenuidissus*, *A. securus*, *A. infrequens*, *A. laura*, *A. locellus*, *A. doris*, *Platycrinus olla*, *P. regalis*, *P. glyptus*, *P. calyculus*, *P. nodobrachiatus*, *P. parviodus*, *P. emirulus*, *P. equalis*, *Synbathocrinus papillatus*, *Rhodocrinus Wachsmuthi*, *Lepidechinus imbricatus*, *Protaster*? *Barrisi*, *Heterocidaris Keokuk*, *H. levispinus*.

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Upper Silurian. Genera *Cypricardinia*, *Mariacrinus*, *Edriocrinus*, *Aspidocrinus*, *Coronocrinus*, *Lepadocrinus* (Conrad), *Spharocystites*, *Anomalocystites*, *Dictyocrinus* (Conrad), *Technocrinus*, *Trematospira*, *Rhyncoispira*, *Nucleospira*, *Eatonia*, *Leptocælia*, *Renssellaeria*, *Megambonia*, *Palæarca*, *Platystoma* (Conrad), *Strophostylus*, *Platyceras* (Conrad), *Camarium*, *Pholidops*, *Phyllograptus*, *Thamnograptus*, *Triplexia*. Pages 149–152 contain a synopsis of the *Cystidea*, comprising diagnoses of eighteen genera.

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This article, illustrated, was also published in the 16th *Ann. Rep. Regents Univ. N. Y. on Condition of State Cabinet*.

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12 plates of illustrations accompany this and the following articles.

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12 plates of illustrations accompany this and the preceding articles. The following genera are here proposed:—*Lingulepis*, *Ptychaspis*, *Chariocephalus*, *Illænurus*, *Triarthrella*, *Aglaspis*.

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This article is an extended abstract from *Trans. Albany Institute* of the same year, with corrections and additions by the author. It is continued in vol. xxxvi of the same series, pp. 11-15.

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Devonian. Genera *Productella*, *Meristella*, *Calospira*, *Stenocrisma* (Conrad), *Leiorhynchus*, *Pentamerella*, *Gypidula* (Dalman), *Amphigenia*, *Cryptonella*, *Tropidoleptus*, *Vitulina*.

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Hall, James. On the genus *Tropidoleptus*. < *20th Ann. Rep. Regents Univ. N. Y. on Condition of State Cabinet*, pp. 279-281. 1868.

Hall, James. Note on the genus *Palæaster*, with descriptions of some new species and observations upon those previously described. < *20th Ann. Rep. Regents Univ. N. Y. on Condition of State Cabinet*, pp. 282-301, 1 plate. 1868.

To this is added notes on the genera *Urastella* (McCoy), *Protaster* (Forbes), *Petraster* Billings, *Lepidechinus* Hall, *Eocidaris* (Desor), *Agelacrinus* (Vanuxem), *Tenias* Billings, *Eugaster* Hall, *Ptilonaster* Hall. The last two genera are new.

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Genera *Gomphocystites*, *Holocystites*, *Echinocystites*, *Orinocystites*.

Hall, James. Description of new species of Crinoidea and other fossils from strata of the age of the Hudson River Group and Trenton Limestone. < 24th Ann. Rep. Regents Univ. N. Y. on Condition of State Museum, pp. 205-224. 1872.

Genus *Lichenocrinus*. 4 plates illustrate this and the following articles.

Hall, James. Description of new species of fossils from the Hudson River Group in the vicinity of Cincinnati, Ohio. < 24th Ann. Rep. Regents Univ. N. Y. on Condition of State Cabinet, pp. 225-232. 1872.

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Hall, James. Notice of three new species of fossil shells from the Devonian of Ohio. < 23d Ann. Rep. Regents Univ. N. Y. on Condition of State Cabinet, pp. 240, 241. 1873.

There are some unfortunate discrepancies of date on the title-pages of some of these reports. The 23d is dated 1873, while the 24th is dated 1872. See remarks in preface to part I, and also in relation to the 28th Regents Report on a following page.

Hall, James. Notice of two new species of fossil shells from the Potsdam Sandstone of New York. < 23d Ann. Rep. Regents Univ. N. Y. on Condition of State Cabinet, pp. 241, 242. 1873.

Genus *Palaemena*.

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Genera *Lingulops*, *Discinella*, *Dicellomus*, *Dinobolus*, *Rhynobolus*.

Hall, James. Descriptions of Bryozoa and Corals of the Lower Helderberg Group. < 26th Ann. Rep. Regents Univ. N. Y. on Condition of State Museum, pp. 93-115. 1874.

Genera *Palaeschara*, *Vermipora*.

Hall, James. Descriptions of new species of Goniatitidæ, with a list of previously described species. < 27th Ann. Rep. Regents Univ. N. Y. on Condition of State Cabinet, pp. 132-136. 1875.

Hall, James. 32 lithogr. plates, illustrating a paper in vol. iv, Trans. Albany Inst., pp. 195-208, 1862, entitled "Notice of some new species of fossils from a locality of the Niagara Group in Indiana, with a list of identified species from the same place". < 28th Ann. Rep. Regents Univ. N. Y. on Condition of State Museum. 1877.

This report bears date 1875 on its title-page, but it was not issued until 1877, and then only in very small number of copies. See *Am. Journ. Sci.*, vol. xiv, p. 494; also dates of text.

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X **Hall, James.** Paleontology of New York. Illustrations of Devonian fossils, Gasteropoda, Pteropoda, Cephalopoda, Crustacea, and Corals of the Upper Helderberg, Hamilton, and Chemung Groups. 1877.

This work is reviewed on page 493, vol. xiv, 3d series, *Am. Journ. Sci.*, but it has not been seen by me (C. A. W.), search for it in the libraries of Washington and Philadelphia having been unsuccessful. Only 100 copies are reported to have been published.

Hall, James, and F. B. Meek. Descriptions of new species of fossils from the Cretaceous formations of Nebraska; with observations on *Baculites ovatus* and *B. compressus*, and the progressive development of the septa in *Baculites*, *Ammonites*, and *Scaphites*. < *Mem. Am. Acad. Arts and Sci.*, vol. v, new ser., pp. 379-411, 8 plates. 1856.

Hall, James, and R. P. Whitfield. Description of new species of fossils from the vicinity of Louisville, Kentucky, and the Falls of the Ohio. < *24th Ann. Rep. Regents Univ. N. Y. on Condition of State Museum*, pp. 181-200^a. 1872.

Genus *Ptychodesma*. The 27th Report contains 5 plates illustrating this article.

Hall, James, and R. P. Whitfield. Remarks on some peculiar impressions in the Sandstones of the Chemung Group of New York. < *24th Ann. Rep. Regents Univ. N. Y. on Condition of State Museum*, pp. 201-204. 1872.

Genus *Hippodophycus*.

137 **Hall, James, and R. P. Whitfield.** Descriptions of new species of fossils from the Devonian of Iowa. < *24th Ann. Rep. Regents Univ. N. Y. on Condition of State Cabinet*, pp. 223-239, 5 plates. 1873.

Hall, James, and R. P. Whitfield. Descriptions of invertebrate fossils, mainly from the Silurian system. < *Paleontology of Ohio (Newberry)*, vol. ii, pp. 67-161, plates i-ix. 1875.

Hall, James, and R. P. Whitfield. Descriptions of Crinoidea from the Waverly Group. < *Paleontology of Ohio (Newberry)*, vol. ii, pp. 162-179, plates xi-xiii. 1875.

X **Hall, James, and R. P. Whitfield.** Paleontology. < *U. S. Geol. Expl. 40th Parallel (King)*, part ii, pp. 197-302, 7 plates. 1877.

Silurian, Devonian, Carboniferous, Triassic, Jurassic. Genus *Septocardia*.

✓ **Harlan, Richard.** Critical notices of various organic remains hitherto discovered in North America. < *Trans. Geol. Soc. Penn.*, vol. i, part i. 1834.

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Harlan, Richard. Notice of nondescript Trilobites from the State of New York, with some observations on the genus *Triarthrus*. < *Trans. Geol. Soc. Penn.*, vol. i, part ii, pp. 263-266, 1 plate. 1835.

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Harger, O. Notice of a new fossil Spider from the Coalmeasures of Illinois. < *Am. Journ. Sci.*, vol. vii, 3d ser., pp. 219-223. 1874.

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Harper, L. Description of *Ceratites americanus*. < *Proc. Acad. Nat. Sci. Phila.*, vol. viii, pp. 126-128, 4 woodcuts. 1856.

Hartt, C. F., and Richard Rathbun. On the Devonian Trilobites and Mollusks of Ereré, Province of Pará, Brazil. < *Ann. N. Y. Lyceum. Nat. Hist.*, vol. xi, pp. 110-127. 1875.

Hayden, F. V. See **Meek, F. B., and F. V. Hayden.**

Hitchcock, C. H. A catalogue of the fossils of the Potsdam Group in North America. < *Proc. Portland Soc. Nat. Hist.*, vol. i, pp. 87-90. 1862.

Hitchcock, C. H. Helderberg Corals in New Hampshire. < *Am. Journ. Sci.*, vol. ii, 3d ser., pp. 148, 149. 1871.

The fossils are obscure, but the genera *Favosites* and *Zaphrentis* have been identified by Mr. Billings.

Hitchcock, E., Jr. A new fossil shell in the Connecticut River Sandstone. < *Am. Journ. Sci.*, vol. xxii, 2d ser., pp. 239, 240, 1 woodcut. 1856.

The author refers the supposed shell to the *Rudista*, and suggests that it belongs to the genus *Spherulites*.

Hitchcock, E., Sen. Report on the Geology of Vermont. Vol. i. Part 2. pp. 251-451. 1861. X^o

In the discussion of Hypozoic and Paleozoic strata, Dr. Hitchcock gives figures and descriptions of many Silurian fossils, none of which were new, and also reprints some valuable matter from the publications of Prof. James Hall. Several genera of *Trilobites* and other fossils are here redescribed.

Holmes, F. S. See **Tuomey, M., and F. S. Holmes.**

Horn, G. H. See **Gabb, W. M., and G. H. Horn.**

Hunt, T. Sterry. Crinoids injected by silicates. < *Am. Naturalist*, vol. v, pp. 445-447. 1871.

This is an abstract of a communication made by Dr. Hunt to the Montreal Natural History Society, and has important bearing on the question of the animal origin of *Eozoon canadense*.

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Hyatt, Alpheus. On the parallelism between the different stages of life in the individual and those in the entire group of the Molluscan order Tetrabranchiata. < *Mem. Bost. Soc. Nat. Hist.*, vol. i, pp. 193-209. 1866.

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Professor Hyatt proposes material changes in the classification of the fossil *Cephalopoda*, and in the division of the genera he has made, the following new ones are proposed:—*Ammatoceras*, *Anatrogynoceras*, *Arnioceras*, *Astroceras*, *Caloceras*, *Coroniceras*, *Cycloceras*, *Dactyloceras*, *Deroceras*, *Discoceras*, *Grammoceras*, *Hildoceras*, *Hammatoceras*, *Leioceras*, *Liparoceras*, *Microceras*, *Ophioceras*, *Pelecoceras*, *Peronoceras*, *Phymatoceras*, *Platypleuroceras*, *Pleuroceras*, *Psiloceras*, *Thysanoceras*, *Tropidoceras*, *Rhacoceras*.

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- Meek, F. B.** Descriptions of new species of Invertebrate fossils, from the Carboniferous and Devonian of Ohio. < *Proc. Acad. Nat. Sci. Phila.*, vol. i, 3d ser., pp. 57-93. 1871.

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Carboniferous and Cretaceous? Genera *Promacrus*, *Prothyris*.

- Meek, F. B.** List of Carboniferous fossils from West Virginia, with descriptions of new species. < *Appendix "B", Report of Regents of West Virginia University for 1870*, pp. 68-73. 1871.

New species:—*Macrodon obsoletus*, *Nucula ? anodontoides*, *Yoldia stvensoni*, *Yoldia carbonaria*, *Phillipsia stvensoni*.

- Meek, F. B.** Supplementary note on the genus *Lichenocrinus*. < *Am. Journ. Sci.*, vol. iii, 3d ser., pp. 15-17. 1872.

This is supplementary to the article at page 299 of vol. ii.

- Meek, F. B.** Descriptions of two new Starfishes and a Crinoid from the Cincinnati Group of Ohio and Indiana. < *Am. Journ. Sci.*, vol. iii, 3d ser., pp. 257-262. 1872.

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Meek, F. B. Preliminary Paleontological report, consisting of lists of fossils, with descriptions of some new types, &c. < *Hayden's Prelim. Rep. U. S. Geol. Surv. of Wyom. and Portions of Contig. Terr.*, pp. 287-318. 1872. X

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Meek, F. B. Notes on some of the fossils figured in the recently issued fifth volume of the Illinois State Geological Report. < *Am. Journ. Sci.*, vol. vii, 3d ser., pp. 189-193; continued on pp. 369-376, and 484-490, and 580-584. 1874.

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Meek, F. B. The new genus *Euchondria*. < *Am. Journ. Sci.*, vol. vii, 2d ser., p. 445. 1874.

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Carboniferous.

+ **Meek, F. B.** Notes on some fossils from near the eastern base of the Rocky Mountains, west of Greeley and Evans, Colorado, and others from about 200 miles further eastward; with descriptions of a few new species. < *Bulletin U. S. Geol. and Geog. Surv. of the Terr.*, 2d ser., No. 1, pp. 39-47. 1875.

These fossils are from the Fox Hills and Laramie (Lignitic) Groups.

X **Meek, F. B.** Description of *Unio*?, supposed to be of Triassic age. < *Wheeler's Ann. Rep. Expl. and Surv. West of the 100th Merid.*, pp. 83, 84. 1875.

X **Meek, F. B.** Description of *Olenellus gilberti* and *O. howelli*. < *Wheeler's Expl. and Surv. West of the 100th Merid.*, vol. iii, *Geology*, pp. 182, 183. 1875.

These two species are fully described and illustrated in *White's Report on Invertebrate Paleontology*, part 1, vol. iv, *Wheeler's Expl. and Surv. West of the 100th Meridian*.

A **Meek, F. B.** Descriptions of the Invertebrate fossils from the Carboniferous System. < *Paleontology of Ohio (Newberry)*, vol. ii, pp. 269-347, plates 10, 14, 15, 16, 17, 18, 19, and 20. 1875.

+ **Meek, F. B.** Notice of a very large *Goniatite* from Eastern Kansas. (Carboniferous.) < *Bulletin U. S. Geol. and Geog. Surv. of the Terr.*, No. 6, 2d ser., vol. i, p. 445. 1876.

The author regards it as at most only a variety of *G. globosus* Meek & Worthen, although attaining so great size.

X **Meek, F. B.** Descriptions and illustrations of fossils from Vancouver's and Socia Islands, and other Northwestern localities. < *Bulletin U. S. Geol. and Geog. Surv. of the Terr.*, vol. ii, No. 4, pp. 351-374, 6 plates. 1876.

Carboniferous, Cretaceous, and Tertiary; mostly Cretaceous. A large part of the species embraced in this paper were originally described by the author in 1856, in vol. iv of *Trans. Albany Institute*, and are here redescribed with others, and illustrated.

+ **Meek, F. B.** Note on the new genus *Wintacrinus*, Grinnell. < *Bulletin U. S. Geol. and Geog. Surv. of the Terr.*, vol. ii, No. 4, pp. 375-378, 2 woodcuts. 1876.

This paper consists largely of a redescription and rectification of the genus.

7 **Meek, F. B.** Descriptions of Cretaceous fossils. < *Report of Capt. Maccomb's Expl. Exped. from Santa Fé to the Junction of the Grand and Green Rivers*, pp. 121-133, 2 plates. 1876.

The exploration was made in 1859, but the report was not published until 1876, when Mr. Meek revised the work, in accordance with his views at the time of publication.

Meek, F. B. Report on the Paleontological collections. < *Capt. Simpson's Report Expl. Great Basin of the Terr. of Utah*, Appendix J, pp. 339-373, plates 1-5. 1876.

Devonian, Carboniferous, Jurassic, Cretaceous, and Tertiary. The explorations were made and the fossils collected nearly eighteen years before the publication of this report; but the paleontology was corrected in accordance with the views of the author at the time of publication.

Meek, F. B. A report on the Invertebrate Cretaceous and Tertiary Fossils of the Upper Missouri country. < *Hayden's U. S. Geol. Surv. of the Terr.*, vol. ix, pp. i-lxiv, 1-629, 45 plates, 45 ll. 4°. Washington: Government Printing Office. 1876. X

This great work contains descriptions and illustrations of nearly 300 species; more than 200 genera and subgenera are fully diagnosed; besides which full diagnoses of the families which embrace them are given. Also philosophical discussion of many important questions. The greater part of the species embraced in this volume were previously, from time to time, described and published, mainly in the publications of the *Acad. Nat. Sci. Phila.*

Meek, F. B. Paleontology. < *U. S. Geol. Expl. 40th Parallel (King)*, part i, pp. 1-197, 17 plates. 1877. X

Silurian, Devonian, Carboniferous, Triassic, Jurassic, Cretaceous, Tertiary. Genera *Entomoceras* (Hyatt), *Eudiscoceras* (Hyatt), *Polyrhysis*, *Rhytophorus*, *Pyrgulifera*.

Meek, F. B., and F. V. Hayden. Descriptions of new species of Gastropoda, from the Cretaceous formations of Nebraska Territory. < *Proc. Acad. Nat. Sci. Phila.*, vol. viii, pp. 63-69. 1856.

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Meek, F. B., and F. V. Hayden. Descriptions of twenty-eight new species of Acephala and one Gastropod, from the Cretaceous formations of Nebraska Territory. < *Proc. Acad. Nat. Sci. Phila.*, vol. viii, pp. 81-87. 1856.

Meek, F. B., and F. V. Hayden. Descriptions of new species of Acephala and Gastropoda, from the Tertiary formations of Nebraska Territory; with some general remarks on the geology of the country about the sources of the Missouri River. < *Proc. Acad. Nat. Sci. Phila.*, vol. viii, pp. 111-126. 1856.

Meek, F. B., and F. V. Hayden. Descriptions of new fossil species of Mollusca, collected by Dr. F. V. Hayden in Nebraska Territory, together with a complete catalogue of all the remains of Invertebrata hitherto described and identified from the Cretaceous and Tertiary formations of that region. < *Proc. Acad. Nat. Sci. Phila.*, vol. viii, pp. 265-286. 1856.

Meek, F. B., and F. V. Hayden. Descriptions of new species and genera of fossils collected by Dr. F. V. Hayden in Nebraska Territory, under the direction of Lieut. G. K. Warren, U. S. Topographical Engineers; with some remarks on the Tertiary and Cretaceous formations of the Northwest, and the parallelism of the latter with those of other portions of the United States and Territories. < *Proc. Acad. Nat. Sci. Phila.*, 2d ser., vol. i, pp. 117-148. 1857.

Genera *Pseudobuccinum*, *Corbulamella*.

Meek, F. B., and F. V. Hayden. Note on fossils of Nebraska. (Letter to Lieut. G. K. Warren.) < *Am. Journ. Sci.*, vol. xxv, 2d ser., pp. 439-442. 1858.

This article is mainly geological, but the fossils which characterize the formations that are discussed are enumerated.

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- Jurassic. Afterward republished and illustrated, in 1865, in *Paleontology of the Upper Missouri, Smithsonian Contributions to Knowledge*.
- Meek, F. B., and F. V. Hayden.** Remarks on the Lower Cretaceous beds of Kansas and Nebraska, together with descriptions of Carboniferous fossils from the Valley of Kansas River. < *Proc. Acad. Nat. Sci. Phila.*, vol. ii, 2d ser., pp. 256-264. 1858.
- Meek, F. B., and F. V. Hayden.** Descriptions of new organic remains from North Eastern Kansas, indicating the existence of Permian rocks in that Territory. < *Trans. Albany Institute*, vol. iv, pp. 73-88. 1858.
- This includes a note in relation to the priority of discovery of these fossils of Permian type
- Meek, F. B., and F. V. Hayden.** Geological explorations in Kansas Territory, including "List of the species mentioned in this paper, with some remarks on the synonymy, and references to the works in which they are described". < *Proc. Acad. Nat. Sci. Phila.*, vol. iii, 2d ser., pp. 8-30. 1859.
- Meek, F. B., and F. V. Hayden.** On a new genus of Patelliform shells from the Cretaceous rocks of Nebraska. < *Am. Journ. Sci.*, vol. xxix, 2d ser., pp. 33-35, 1 plate. 1860.
- Genus *Antisomyon*.
- Meek, F. B., and F. V. Hayden.** Descriptions of new organic remains from the Tertiary, Cretaceous, and Jurassic rocks of Nebraska. < *Proc. Acad. Nat. Sci. Phila.*, vol. iv, 2d ser., pp. 175-184. 1860.
- A description of the Carboniferous species *Myalina aviculoides* is also added; also a corrected list of fossils.
- Meek, F. B., and F. V. Hayden.** Systematic catalogue, with synonyma, &c., of Jurassic, Cretaceous, and Tertiary fossils collected in Nebraska by the Exploring Expeditions under the command of Lieut. G. K. Warren, of U. S. Topographical Engineers. < *Proc. Acad. Nat. Sci. Phila.*, vol. iv, 2d ser., pp. 417-432. 1860.
- Meek, F. B., and F. V. Hayden.** Descriptions of new Lower Silurian (Primordial), Jurassic, Cretaceous, and Tertiary fossils, collected in Nebraska by the Exploring Expedition under the command of Capt. Wm. F. Reynolds, U. S. Topographical Engineers, with some remarks on the rocks from which they were obtained. < *Proc. Acad. Nat. Sci. Phila.*, vol. v, 2d ser., pp. 415-447. 1861.
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Meek, F. B., and A. H. Worthen. Descriptions of new Carboniferous fossils from Illinois and other Western States. < *Proc. Acad. Nat. Sci. Phila.*, vol. iv, 2d ser., pp. 447-472. 1860. 13

Genera *Sphenopoterium*, *Soleniscus*. Afterward republished in the *Illinois Geological Reports*, vol. II.

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Meek, F. B., and A. H. Worthen. Note in relation to a genus of Crinoids from the Coalmeasures of Illinois and Nebraska, proposed on page 174 of this volume of the Journal. < *Am. Journ. Sci.*, vol. xxxix, 2d ser., p. 350. 1865.

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A "note in regard to the name 'Cincinnati Group', used in the foregoing paper" is appended on p. 155. The descriptions are republished and the views restated in the *Illinois Geological Reports*, vol. I.

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Carboniferous. Genera *Stegancrinus*, *Strotocrinus*, *Anomphalus*. Afterward republished and illustrated in the *Illinois Geological Reports*.

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Genera *Monopteria*, *Megaptera*. Afterward republished in the *Illinois Geological Reports*, vol. II.

Meek, F. B., and A. H. Worthen. Descriptions of Invertebrates from the Carboniferous System. < *Worthen's Geological Survey of Illinois*, vol. II, pp. 145-411, plates 14-20, and 23-32. 1866.

Genera *Sphenopoterium*, *Cardiopsis*, *Trematodiscus*, *Strotocrinus*, *Stegancrinus*, *Calocrinus*, *Oligoporus*, *Erisocrinus*, *Syntrielasma*, *Eumicrotis*, *Trachydomia*, *Orthonema*, *Soleniscus*, *Acanthotelson*, *Palaeocaris*, *Anthracerpes*, *Palaeocampa*, *Shanaster*. Volumes II, III, V, and VI of these *Reports* all comprise very important works on Invertebrate Paleontology, in which are not only species and genera described, but higher groups are defined, and many important questions are philosophically discussed.

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Meek, F. B., and A. H. Worthen. Remarks on the Blastoidea, with descriptions of new species. < *Proc. Acad. Nat. Sci. Phila.*, vol. xiii, 2d ser., pp. 83-91. 1869.

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The author regards these forms as congeneric.

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Genera *Phyetocrinus*, *Nipterocrinus*, *Codonites*.

Meek, F. B., and A. H. Worthen. Paleontology of Illinois. Descriptions of Invertebrates. < *Worthen's Geological Survey of Illinois*, vol. vi, pp. 491-532, plates 23-32. 1875.

Genus *Carbonarca*. A portion of these descriptions are by Mr. Worthen alone.

Miller, S. A. Cincinnati Quarterly Journal of Science. 1874.

This journal existed only two years, 1874 and 1875. The first year it was conducted by Mr. Miller as editor and proprietor, and the second year by the same in connection with L. M. Hoses, when it was discontinued, making volumes i and ii complete. Mr. Miller contributed descriptions of quite a number of species and two genera, which are distributed throughout the pages of both volumes. As this publication is likely to be seldom found in libraries, a list of these species and genera is here given. All are of Lower Silurian age.

ANOMALODONTA. *A. gigantea*. *Bellerophon mohri*. *Beyrichia duryi*. *B. chambersi*. *B. richardsoni*. *B. striatmarginatus*. *Buthotreps ramulosus*. *Oyclora hoffmani*. *Cyrtoceras vallandighami*. *Cypricardites hainesi*. *Cyrtolites elegans*. *C. carinata*. *Glyptocrinus fornsbelli*. *Leperditia byrnesi*. *Lichenocrinus tuberculatus*. MEGALOGRAPTUS. *M. welchi*. *Modiolopsis versaillesensis*. *Pascolus darwini*. *P. claudet*. *Pleuronomaria halli*. *Streptorhynchus? halli*. *Tentaculites richmondensis*. *Trematis dyeri*. *Acidaspis anchoralis*. *A. o'nealli*. *Arthraria biclava*. *Beyrichia cincinnatensis*. *Crania dyeri*. *O. multipunctata*. *Cyrtoceras obscura*. *O. ventricosum*. *Glyptocrinus shafteri*. *Heterocrinus isodactylus*. *Lingula van hornet*. *Orthis meeki*. *Orthoceras byrnesi*. *O. dyeri*. *O. cincinnatensis*. *O. halli*. *O. harperi*. *O. fosteri*. *O. meeki*. *O. mohri*. *O. transversa*. *Trematospira (?) quadriplicata*.

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Cretaceous.

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Morton, S. G. Description of two new species of shells of the genera *Scaphites* and *Crepidula*; with some observations on the Ferruginous Sand, Plastic Clay, and Upper Marine formations of the United States. < *Journ. Acad. Nat. Sci. Phila.*, vol. vi, 1st ser., pp. 107-119, 1 plate. 1829.

To which is added a "Note, containing a notice of some fossils recently discovered in New Jersey", pp. 120-129.

Morton, S. G. Additional observations on the geology and organic remains of New Jersey and Delaware. < *Journ. Acad. Nat. Sci. Phila.*, vol. vi, 1st ser., pp. 189-204, 1 plate. 1830.

Mostly corrected descriptions of species formerly published in a previous part of the same volume.

Morton, S. G. Synopsis of the organic remains of the Ferruginous Sand formation of the United States, with geological remarks. < *Am. Journ. Sci.*, vol. xviii, 1st ser., pp. 243-250, 3 plates. 1830.

Continued from vol. xvii, pp. 274-295.

Morton, S. G. Synopsis of the organic remains of the Cretaceous Group of the United States; illustrated by nineteen plates; to which is added an appendix containing a tabular view of the Tertiary fossils hitherto discovered in North America. 8°. pp. 88 + 8 + 23. 1834.

Genera *Venilla*, *Hamulus*. The "appendix" was originally published in vol. viii, *Journ. Acad. Nat. Sci. Phila.*, but the body of the work is an independent publication, and contains many original descriptions of Cretaceous fossil species.

Morton, S. G. Notice and description of the organic remains embraced in a paper entitled "Observations on the Bituminous Coal deposits of the Valley of the Ohio, and the accompanying rock strata; with notices of the fossil organic remains and the relics of vegetable and animal bodies, illustrated by a geological map, by numerous drawings of plants and shells, and by views of interesting scenery; by Dr. S. P. Hildreth of Marietta, Ohio". < *Am. Journ. Sci.*, vol. xxix, 1st ser., pp. 149-154. 1836.

30 woodcut plates, mostly plants; but 6 of them contain figures of Invertebrate fossils. Dr. Hildreth's paper occupies the 148 pages immediately preceding that of Dr. Morton.

Morton, S. G. Description of several new species of fossil shells from the Cretaceous deposits of the United States. < *Proc. Acad. Nat. Sci. Phila.*, vol. i, pp. 106-110. 1841.

From New Jersey and the Upper Missouri River region,

Morton, S. G. Description of two new species of fossils from the Lower Cretaceous strata of New Jersey. < *Proc. Acad. Nat. Sci. Phila.*, vol. i, pp. 132, 133. 1841.

Morton, S. G. Description of some new species of organic remains of the Cretaceous group of the United States, with a tabular view of the fossils hitherto discovered in this formation. < *Journ. Acad. Nat. Sci. Phila.*, vol. viii, 1st ser., pp. 207-227, 2 plates. 1842.

This article also embraces a "Tabular view of the organic remains hitherto discovered in the Cretaceous strata of the United States".

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Wholly a description of species.

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Carboniferous.

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The invertebrate fossils are Carboniferous only. The same article also embraces descriptions of plants and fish remains.

Nicholson, H. Alleyne. On the genera *Cornulites* and *Tentaculites*, and on a new genus, *Conchiolites*. < *Am. Journ. Sci.*, vol. iii, 3d ser., pp. 202-206. 1872.

Nicholson, H. Alleyne. On the genera *Conchiolites* and *Ortonia*. < *Cincinnati Quarterly Journal of Science*, vol. i, pp. 236-238. 1874.

In this note, Professor Nicholson replies to some criticisms of the editor questioning the validity of the genera named.

Nicholson, H. Alleyne. Description of the Corals of the Silurian and Devonian systems. < *Paleontology of Ohio (Newberry)*, vol. ii, pp. 181-242. 1875.

This and the two succeeding articles in the same volume are illustrated on plates 21, 22, 23, 24, and 25.

Nicholson, H. Alleyne. Descriptions of the Amorphozoa, from the Silurian and Devonian formations. < *Paleontology of Ohio (Newberry)*, vol. ii, pp. 243-255. 1875.

For reference to illustrations, see preceding entry. Genera *Syringostroma*, *Dictyostroma*.

Nicholson, H. Alleyne. Descriptions of Polyzoa, from the Silurian formation. < *Paleontology of Ohio (Newberry)*, vol. ii, pp. 257-268. 1875.

For reference to illustrations, see two preceding entries.

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Carboniferous.

Norwood, J. G., and Henry Pratten. Notice of the genus *Chonetes*, as found in the Western States and Territories; with descriptions of eleven new species. < *Journ. Acad. Nat. Sci. Phila.*, vol. iii, 2d ser., pp. 23-31, 1 plate. 1855.

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Silurian, Devonian, and Carboniferous. This work is mainly reproduced in Dr. Owen's large report, subsequently published.

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Genera *Menocephalus*, *Orepicephalus*, *Lonchocephalus*, *Dikelocephalus*, *Selenoides*. Silurian, Devonian, Carboniferous, and Cretaceous.

Owen, D. D. Geological reconnaissance of Arkansas. > Vol. ii (Owen). 1860.

3 plates of Cretaceous fossils, with names accompanying, but no text.

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The author explains the mode of occurrence of the remains in the layers of limestone.

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This report bears date on its title-page 1875, but it was not issued until 1877, and then only a very small number of copies were published. See *Am. Journ. Sci.* for December, 1877. That the title-page date is wrong is manifest from the later dates that two of the authors have appended to their articles, which no doubt correctly represent the dates of their preparation.

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Published in advance of *Report of New York State Museum of Natural History*. In this paper, Mr. Walcott announces further discoveries concerning the ventral portion and appendages of Trilobites, and draws some important conclusions as to their homologies.

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- 1/ **White, C. A.** Paleontological Papers No. 4: Comparison of the North American Mesozoic and Cenozoic Unionidæ and associated Mollusks with living species. < *Bulletin U. S. Geol. and Geog. Surv. of the Territories*, vol. iii, pp. 615-624. 1877. +

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Whitfield, R. P. Descriptions of new fossils. < *Captain Ludlow's Report on the Black Hills of Dakota*, pp. 103, 104, 1 plate. 1875. +

These descriptions and figures are repeated in the *Report of the Chief of Engineers U. S. Army for 1875*, part ii. *Obolus pectinoides*, Primordial; *Terebratula helena*, Cretaceous.

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h **Worthen, A. H.** Notice of a new species of *Platycrinus* and other fossils from the Mountain Limestone of Illinois and Iowa; being an extract from the Second Annual Report of the Illinois Geological Survey. < *Trans. St. Louis Acad. Sci.*, vol. i, pp. 569-571. 1860.

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Yandell, Lunsford P. On the distribution of the Crinoidea in the Western States. < *Proc. Am. Assoc. Adv. Sci.*, vol. v, pp. 229-235. 1851.

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This is a small publication of 36 pages, 8°, and one plate of illustrations of Crinoids. It contains an enumeration of fossils from the vicinity of Louisville, and from Grayson County, Kentucky, but no specific descriptions of fossils, although a few new species are named, some of which names have been adopted by subsequent authors.

Yandell, Lunsford P. See **Shumard, B. F., and L. P. Yandell.**



**BIBLIOGRAPHY OF NORTH AMERICAN INVERTEBRATE
PALEONTOLOGY.**

PART II.

**EMBRACING TITLES AND ABSTRACTS OF PUBLICATIONS MADE
IN BRITISH NORTH AMERICA, IN THE WEST
INDIES, AND IN EUROPE.**

By H. ALLEYNE NICHOLSON, M. D., D. Sc.

PREFACE TO PART II.

The following report comprises the titles and places of publication of all works and memoirs relating to North American Invertebrate Palæontology which have been published in British North America, in the West Indies, in Britain, and on the Continent of Europe, so far as the writer has been able to discover. That this report is imperfect, and that omissions of a more or less serious character are certain to be found in it, may be taken for granted, since there are some serial publications to parts of which the author has found it impossible to obtain access, and since Palæontological papers are occasionally published in journals or works of a generally unscientific character. To ensure, therefore, anything like absolute completeness, it would have been necessary to have surveyed almost the entire range of published scientific literature, a task for which the writer's leisure would have been insufficient; especially as notices of American fossils are often to be found in memoirs which, to judge from their titles, would be supposed to deal with subjects of an entirely different nature. It is hoped, however, that such omissions as may be found will not prove to be of great importance, and that they may be excused on the ground that the writer's place of residence is one which renders it difficult for him to consult the large public libraries of London except at distant intervals.

In conclusion, the writer would wish to use this opportunity of returning his best thanks to those of his fellow-workers who have been kind enough to assist him in the preparation of this report, among whom he must mention with special

74 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

gratitude Prof. H. Milne-Edwards, Prof. De Koninck, Prof. Ferdinand Roemer, M. Barrande, Dr. Gustav Lindström, M. De Loriol, Principal Dawson, Robert Etheridge, Esq., Jun., R. J. Lechmere Guppy, Esq., Prof. Martin Duncan, and J. F. Whiteaves, Esq. H. A. N.

UNITED COLLEGE, ST. ANDREWS, SCOTLAND,

November 19, 1877.

II.—PUBLICATIONS MADE IN BRITISH NORTH AMERICA, WEST INDIES, AND EUROPE.

Agassiz, Louis. Monographies d'Echinodermes vivants et fossiles. Neuchâtel. 1838. ✓

Describes some North American fossil Echinoids.

Anon. Correspondence of Joachim Barrande, Sir William Logan and James Hall, on the Taconic System, and on the age of the fossils found in the Rocks of Northern New England, and the Quebec Group of Rocks. < *Canad. Nat.*, vol. vi, pp. 106-120. [Reprinted from the *Am. Journ. Sci. and Arts*, No. 92, 1861.] 1861.

The correspondence deals chiefly with the characters of the fossils and the stratigraphical conclusions deducible therefrom.

Anon. Discovery of microscopic organisms in the Siliceous Nodules of the Palæozoic Rocks of New York. < *Canad. Nat.*, vol. vii, pp. 281-283. 1862.

Records the discovery by Dr. M. C. White in hornstone nodules from the Carboniferous, Devonian, and Silurian Rocks of numerous *Microphytes* and *Microzoa*.

Anthony, J. G. Letter to C. Lyell, Esq., V. P. G. S., on an impression of the soft parts of an *Orthoceras*. < *Quart. Journ. Geol. Soc.*, vol. iii, pp. 255-257 (with woodcut). 1847.

Notifies the occurrence in the Cincinnati Group of Ohio of specimens of *Orthoceras*, apparently preserving impressions of the soft parts.

Bailey, J. W. Infusorial deposits in America. < *Ann. and Mag. Nat. Hist.*, ser. 1, vol. xv, pp. 214, 215. 1845.

A reprint from *Silliman's American Journal*, January, 1845.

Bailey, J. W. On the origin of Greensand, and its formation in the oceans of the present epoch. < *Ann. and Mag. Nat. Hist.*, ser. 2, vol. xviii, pp. 425-428. 1856.

Reprinted from *Proc. Boston Soc. Nat. Hist.*, vol. v, p. 364.

Bailey, L. W., and G. F. Matthew. Preliminary report on the geology of Southern New Brunswick. < *Geological Survey of Canada: Report of Progress for 1870-71*, pp. 13-240. Ottawa, 1872. + J. 265

Contains lists of, and occasional notes on, the fossils.

Barker, Arthur E. Latest observations on *Eozoön canadense* by Prof. Max Schultze. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiii, pp. 379, 380. 1874.

Publishing a letter from Prof. Max Schultze, in which he expresses the opinion that the "proper wall" of *Eozoön* is of inorganic origin.

Barrande, Joachim. Système Silurien du Centre de la Bohême. 4°. 1852-74. X

Describes or discusses critically a number of species of American fossils.

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- Barrande, Joachim.** Observations sur quelques genres de Cephalopodes Siluriens. < *Bull. de la Soc. Géol. de France*, ser. 2, t. xiv, pp. 428-437. 1857.

The author discusses the characters of various genera of Silurian Cephalopods, with special reference to the types which occur in North America.

- Barrande, Joachim.** Documents anciens et nouveaux sur la faune primordiale et le système Taconique en Amérique. < *Bull. de la Soc. Géol. de France*, ser. 2, vol. xviii, pp. 203-321, plates iv, v. 1861.

The following are the principal subjects discussed in this elaborate memoir:—(1) The characters of three primordial *Trilobites* discovered at Georgia (Vermont). The characters and affinities of these are fully treated of. (2) The new fauna discovered in 1860 in the Point Lévis beds, near Quebec, and the primordial character of the *Trilobites*. (3) The extension of the primordial fauna to Texas. (4) The recognition of the primordial fauna in Tennessee in 1856 and in Nebraska in 1858. (5) The Taconic System of Dr. Emmons. Under this head, M. Barrande considers the system of deposits, so-called, both geologically and paleontologically, in great detail; and he describes and figures the *Trilobites* quoted by Emmons. (6) The remainder of the memoir is occupied with discussing the views of Hall, Marcou, and Logan on various points bearing on the above subjects.

- Barrett, L.** On some Cretaceous Rocks in the south-eastern portion of Jamaica. < *Quart. Journ. Geol. Soc. Lond.*, vol. xvi, pp. 324-326. 1860.

A stratigraphical paper, noting, however, the occurrence of *Hippurites*, *Inocerami*, and other Cretaceous fossils in limestones underlying the Tertiary series of Jamaica.

- Bayfield, Capt.** On the junction of the Transition and Primary Rocks of Canada and Labrador. < *Quart. Journ. Geol. Soc. Lond.*, vol. i, pp. 450-459. 1845.

Contains lists of the fossils.

- Bell, Robert.** On the occurrence of Fresh-water Shells in some of our Post-Tertiary deposits. < *Canad. Nat.*, vol. vi, pp. 42-51. 1861.

Describes the occurrence of various fresh-water shells in the Post-Tertiary deposits of Lower Canada, of the Lake Ontario region, of the Niagara River, and of the country round the Georgian Bay.

- Bessels, Emil.** Notes on Polaris Bay. < *Bull. de la Soc. de Géographie*, Paris, pp. 291-299. 1875.

Contains notes on the Silurian and Post-Pliocene fossils.

- Beyrich, E.** Ueber *Leaia leidyi*. < *Zeitschrift d. deutsch. geol. Ges.*, Bd. xvi, pp. 363, 364. 1864.

A note on the characters of *Leaia leidyi*.

- Bigsby, John J.** Notes on the Geography and Geology of Lake Huron. < *Trans. Geol. Soc. Lond.*, ser. 2, vol. i, pp. 175-209, plates xxv-xxx. 1823.

This memoir contains various notes on the fossils, and especially on the *Orthoceratites* and Corals. In an appendix is a note by Mr. Stokes on a *Trilobite*, to which he gives the name of *Asaphus platycephalus*, from the Trenton Limestone of St. Joseph Island. One of the figures in pl. xxvii exhibits the labrum. In the explanations to the plates, various descriptive notes on the fossils are given, and Mr. Stokes appends a description of his new genus *Huronina* (which he here regards as a Coral), and names five species of the same.

- Bigsby, John J.** On the Erratics of Canada. < *Quart. Journ. Geol. Soc. Lond.*, vol. vii, pp. 215-238. 1851.

A geological paper, but notes the occurrence of Post-Tertiary strata with numerous fossil *Uniones* on the banks of the Nottawasaga River, Georgian Bay, Ontario, along with other fresh-water shells.

- Bigsby, John J.** On the Geology of the Lake of the Woods, South Hudson's Bay. < *Quart. Journ. Geol. Soc. Lond.*, vol. viii, pp. 400-406. 1852.

Notes the occurrence of several Upper Silurian fossils in limestone at Sandhill Lake, near Lake of the Woods.

- Bigsby, John J.** On the Geology of Quebec and its environs. < *Quart. Journ. Geol. Soc. Lond.*, vol. ix, pp. 82-101, with map and 4 engravings. 1853.

Contains lists of fossils collected by the author from the Lower Silurian rocks of the neighbourhood of Quebec, and from the Quebec Group of Point Lévis. A description and figure of a new species of Graptolite (*Didymograptus caduceus*) are supplied by Mr. Salter, the specimens being from the Quebec Group.

- Bigsby, John J.** On the Palæozoic Basin of the State of New York. Part i. A synoptical view of the mineralogical and fossil characters of the Palæozoic strata of the State of New York. < *Quart. Journ. Geol. Soc. Lond.*, vol. xiv, pp. 305, 306, and 335-427. 1858.

In the first portion of this memoir, the author gives an account of the Palæozoic strata of the State of New York, from the Catskill Formation to the Potsdam Sandstone inclusive, each formation being treated of as regards its lithological characters, its geological position and stratigraphical relations, and its fossils, these last being divided into "typical", "recurrent in Europe", and "recurrent in New York". A short section is devoted to geological and palæontological "inferences and conclusions", based on the preceding synoptical view of the strata; and the memoir is concluded with elaborate tables of fossils. These tables are as follows:—I. The Silurian fossils of the State of New York; II. The group-relations of the Silurian fossils of the State of New York; III. The recurrent fossils of the Trenton Limestone; IV. The fossils escaped from Lower to Upper Silurian, into and across the Middle or Transitional Period; V. The fossils common to Europe and the Niagara Group of the State of New York; VI. The group-relations of the fossils of the four Lower Helderberg Limestones; VII. The group-relations of the Devonian fossils of the State of New York; VIII. The recurrent fossils of the Devonian System of the State of New York, including the species which enter from the Silurian; IX. The recurrence of the fossils of the Corniferous Limestone; X. Hamilton fossils common to the State of New York and Europe; and XI. European fossils in the Chemung Group of the State of New York.

- Bigsby, John J.** On the Palæozoic Basin of the State of New York. Part ii. Classification of the Palæozoic strata of the State of New York. < *Quart. Journ. Geol. Soc. Lond.*, vol. xiv, pp. 427-452. 1858.

In this portion of his memoir, the author indicates what he believes to be the natural classification and arrangement of the Palæozoic Rocks of the State of New York, as shown both by palæontological and physical evidence.

- Bigsby, John J.** On the Palæozoic Basin of the State of New York. Part iii. An enquiry into the sedimentary and other external relations of the Palæozoic fossils of the State of New York. < *Quart. Journ. Geol. Soc. Lond.*, vol. xv, pp. 251-335. 1859.

The chief subjects treated of in this part of Dr. Bigsby's memoir are the characters and conditions of sediments generally, and of the Palæozoic sediments in particular; the distribution and immediate relations of Palæozoic animal life in Wales and in the State of New York; the groupings of fossils and their order of precedence; the increment and decrement of Palæozoic genera and species; the duration of invertebrate life; the epochal and geographical diffusion of species; the recurrence of organic forms; and the resemblances between the Palæozoic basins of Wales and New York. The paper is concluded by elaborate tables showing the distribution of the Silurian and Devonian fossils of the State of New York, and the different sedimentary habitats of the former.

- Bigsby, John J.** On the Laurentian Formation: its mineral constitution, its geographical distribution, and its residuary elements of life. < *Geological Magazine*, Dec. 1, vol. i, pp. 154-158, 200-206. 1864.

Contains remarks on the distribution of phosphate of lime and carbon in the Laurentian Rocks, and on the occurrence of *Eozoön*.

X **Bigsby, John J.** Thesaurus Siluricus. The Flora and Fauna of the Silurian Period. With addenda (from recent acquisitions). 1 vol. 4°. pp. 214. London, 1868.

In this well-known catalogue of Silurian fossils, all the species of Invertebrate fossils known to the author at the date of his work are recorded, with the names of their authors and their geological and geographical positions.

[**Billings, E.**] Fossils of the Potsdam Sandstone; sea-weeds, shells, and foot-prints on the rock at Beauharnois. < *Canad. Nat.*, vol. i, pp. 32-39, with 2 woodcuts. 1856.

Notes on the fossils of the Potsdam Sandstone.

[**Billings, E.**] On some of the characteristic fossils of the Lower Silurian Rocks of Canada. < *Canad. Nat.*, vol. i, pp. 39-47, with 11 woodcuts. 1856.

[**Billings, E.**] On the Crinoidea or Stone-Lilies of the Trenton Limestone; with a description of a new species. < *Canad. Nat.*, vol. i, pp. 48-57, with 4 woodcuts. 1856.

The new species described is *Glyptocrinus ramulosus*.

[**Billings, E.**] Fossils of the Upper Silurian Rocks, Niagara and Clinton Groups. < *Canad. Nat.*, vol. i, pp. 57-60, plate i. 1856.

Describes some characteristic Niagara and Clinton fossils.

[**Billings, E.**] On the fossil corals of the Lower Silurian Rocks of Canada. < *Canad. Nat.*, vol. i, pp. 115-128, with 15 woodcuts. 1856.

Describes some characteristic species.

[**Billings, E.**] On some of the technical terms used in the description of fossil shells. < *Canad. Nat.*, vol. i, pp. 128-131, with 7 woodcuts. 1856.

Describes the structure of the shell of the *Brachiopoda*.

[**Billings, E.**] On some of the fossil shells of the Niagara and Clinton formations. < *Canad. Nat.*, vol. i, pp. 131-139, plate ii. 1856.

Describes some of the characteristic Brachiopods of the above-mentioned formations.

[**Billings, E.**] On some of the Lower Silurian fossils of Canada. < *Canad. Nat.*, vol. i, pp. 203-208, with 23 woodcuts. 1856.

Describes a number of Brachiopods from the Trenton and Hudson River formations.

[**Billings, E.**] Description of fossils occurring in the Silurian Rocks of Canada. < *Canad. Nat.*, vol. i, pp. 312-320, with 10 woodcuts. 1856.

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[**Billings, E.**] On the Tertiary Rocks of Canada, with some account of their fossils. < *Canad. Nat.*, vol. i, pp. 321-346, with 13 woodcuts. 1856.

Describes a number of Post-Pliocene fossils from Canada.

[**Billings, E.**] Fossils of the Hamilton Group. < *Canad. Nat.*, vol. i, pp. 471-479, with 18 woodcuts. 1856.

Descriptions of common Hamilton fossils, quoted for the most part from the *Geology of New York*, by Prof. Hall.

[**Billings, E.**] On the genera of fossil Cephalopoda occurring in Canada. < *Canad. Nat.*, vol. ii, pp. 135-138, plate ii. 1857.

Describes nine genera of fossil Cephalopods as known to occur in Canada.

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Billings, E. Notes on some of the more remarkable genera of Silurian and Devonian fossils. < *Canad. Nat.*, new ser., vol. ii, pp. 184-198, with 14 woodcuts, and pp. 405-409, with 3 woodcuts. 1857.

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Billings, E. New genera and species of fossils from the Silurian and Devonian formations of Canada. < *Canad. Nat.*, vol. iii, pp. 419-444, with 24 woodcuts. 1858.

Descriptions of numerous new fossils, from the *Report of Progress of the Geological Survey of Canada for 1857*.

Billings, E. Report for the year 1857. < *Geological Survey of Canada: Report of Progress for the year 1857*. Toronto, 1858. pp. 147-192, with 24 engravings. X 32

In the first part of this report, amongst other matters, is an essay on the fauna of the Black River and Trenton Limestones of Canada, as compared with that of the equivalent formations in the United States. The remainder of the report is occupied with descriptions of new genera and species of fossils. Amongst the Corals twenty new species are described from the Lower and Upper Silurian and the Devonian formations; the genus *Palaeophyllum* being described as new. Thirteen new species of Lamellibranchs are described, allocated amongst the three newly defined groups of *Cyrtodonta*, *Vanuxemia*, and *Matheria*. Lastly, the remarkable *Obolus* (*Dinobolus*) *canadensis* is described and figured, and the new genus *Eichwaldia* is proposed for a single new Brachiopod (*E. subtrigonalis*) from the Trenton Limestone.

Billings, E. On the Asteriadae of the Lower Silurian Rocks of Canada. < *Figures and Descriptions of Canadian Organic Remains: Decade III*. Montreal, 1858. pp. 75-85, plates viii-x, with 2 woodcuts. X 32

This memoir describes 9 Echinoderms, which the author refers to the Asteriadae. One of these, however, belongs to *Agelacrinites*, and another is referable to the abnormal sessile genus *Edriaster* (here proposed by the author in lieu of the name *Cyclaster*, which he had previously brought forward, but which is preoccupied). All the species are from the Trenton Limestone or Hudson River Group. *Stenaster*, *Petraster*, and *Tenaster* are defined as new genera.

Billings, E. On the Cystideae of the Lower Silurian Rocks of Canada. < *Figures and Descriptions of Canadian Organic Remains: Decade III*. Montreal, 1858. pp. 9-74, plates i-vii, with 22 engravings. X 32

In the first portion of this work, the author treats of the geological position, structure, and classification of the Cystideans, including such subjects as the general form and external skeleton of these organisms; the mouth, ambulacral orifice, and anus; the arms, ambulacral grooves, and pinnulae; the pectinated rhombs, and the column. The second section deals with the ambulacral orifices of the Cystideans and Crinoids, and adduces a large body of evidence on this head. The third section comprises descriptions of the species of Cystideans found in the Lower Silurian of Canada, 19 species being described, belonging to the genera *Pleurocystites*, *Glyptocystites*, *Comarocystites*, *Amygdalocystites*, *Malocystites*, *Palaeocystites*, and *Ateleocystites*, of which the last three are now for the first time founded.

[**Billings, E.**] Geological Survey of Canada. Report of progress for the years 1853-54-55-56. Printed by order of the legislative assembly, 1858. X 32

The Palaeontological portion of this report is by Mr. Billings, and the first section reviews the palaeontological relations of the Anticosti Rocks. In the second section the author gives detailed descriptions (unaccompanied by figures) of numerous new species of fossils from the Silurian Rocks of Canada, comprising 36 Echinoderms, 4 Brachiopods, 14 Gastropods, 34 Cephalopods, 3 Trilobites, 2 species of *Pasceolus* (of uncertain affinities), and 2 of *Beatricea* (here referred to the vegetable kingdom). There are also descriptions of 10 species of Cystideans, which the author had previously published in the *Canadian Journal* (ser. 1, vol. ii, 1854). The new genera described are *Hybocrinus*, *Orabocrinus*, *Oleocrinus*, *Porocrinus*, *Pasceolus*, and *Beatricea*. The *Huronina* of Stokes are referred to the genus *Orthoceras*.

80 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Billings, E. On some new genera and species of Brachiopoda from the Silurian and Devonian Rocks of Canada. < *Canad. Nat.*, vol. iv, pp. 131-135, with 10 figures. [From the *Report of the Geological Survey of Canada for 1858.*] 1859.

Founds the genera *Centronella* and *Stricklandia* (subsequently altered to *Stricklandinia*), and describes three new species of the latter.

Billings, E. Description of a new genus of Brachiopoda, and on the genus *Cyrtodonta*. < *Canad. Nat.*, vol. iv, pp. 301-303. [Published in advance from the *Report of the Geological Survey of Canada, 1858-59.*] 1859.

Founds the genus *Camerella*, with three new species, and amends the characters of *Cyrtodonta*.

Billings, E. Fossils of the Calciferosus Sandrock, including those of a deposit of White Limestone at Mingan, supposed to belong to the formation. < *Canad. Nat.*, vol. iv, pp. 345-367, with 12 engravings. [From the *Report of the Geological Survey of Canada for 1858-59.*] 1859.

Describes 41 species from the Calciferous Sandstone, of which 24 are new.

Billings, E. Description of a new Palæozoic Starfish of the genus *Palæaster*, from Nova Scotia. < *Canad. Nat.*, vol. iv, pp. 69, 70, with a woodcut. 1859.

Describes, under the name of *Palæaster parviusculus*, a new Starfish from the Lower Arisaig Group (Middle Silurian) of Arisaig, Nova Scotia.

Billings, E. Descriptions of some new species of Trilobites from the Lower and Middle Silurian Rocks of Canada. < *Canad. Nat.*, vol. iv, pp. 367-383, with 12 engravings. [Extracted from the *Report of the Geological Survey of Canada for 1858-59.*] 1859.

Describes 12 new species of *Trilobites* (9 of *Illanus*, 1 of *Amphion*, and 1 of *Triarthrus*).

Billings, E. Fossils of the Chazy Limestone, with descriptions of new species. < *Canad. Nat.*, vol. iv, pp. 426-470, with 38 engravings. [Extracted from the *Report of the Geological Survey of Canada for 1858-59.*] 1859.

Contains notices or descriptions of 129 species of fossils from the Chazy Limestone, being the total number at that time known as occurring in this formation in Canada. Thirty-four species are described as new.

[**Billings, E.**] *Atrypa hemiplicata*. < *Canad. Journ.*, new ser., vol. iv, p. 316. 1859.

A note stating that *Atrypa hemiplicata*, Hall, is a *Pentamerus*, and that *Pentamerus reversus*, Bill., is only a large variety of it.

Billings, E. On the Crinoidea of the Lower Silurian Rocks of Canada. < *Figures and Descriptions of Canadian Organic Remains: Decade IV.* Montreal, 1859. pp. 72, plates i-x, with 24 woodcuts.

In the first portion of this work, the author gives an account of the history and structure of the Crinoids, and in the second portion he describes all the Lower Silurian Crinoids of Canada which are in such a state of preservation as to allow of characterisation. In all, 43 species are recognized, belonging to 13 genera, and 18 species of the above number are described for the first time. The new generic types described are *Blastoidocrinus*, *Pachyocrinus*, *Palæocrinus*, *Reticocrinus*, and *Syringocrinus*. Of these, *Blastoidocrinus*, *Pachyocrinus*, and *Syringocrinus*, being based on incomplete examples, are not fully defined; and the most remarkable of them is the first, which forms in many respects a transitional between the *Blastoidea* and the true Crinoids.

- Billings, E.** On the Fossil Corals of the Devonian Rocks of Canada West. < *Canad. Journ.*, new ser., vol. iv, pp. 97-140, with 29 woodcuts. 1859.

This memoir contains descriptions of 45 species of fossil Corals from the Corniferous and Hamilton formations of Ontario. The new genera *Blothrophyllum* and *Haimeophyllum* are founded, and the new species are distributed as follows:—*Alveolites labiosa*, *A. cryptodens*, *Syringopora laxata*, *Aulopora cornuta*, *A. filiformis*, *A. umbellifera*, *Heliophyllum eriense*, *H. cayugaense*, *H. canadense*, *H. tenuiseptatum*, *H. colligatum*, *Clisiophyllum oneidaense*, *Blothrophyllum decorticatum*, *Eridiphyllum simcoense*, *Diphyphyllum stramineum*, *D. arundinaceum*, *Cystiphyllum aggregatum*, *C. senecaense*, *C. grandis*?, and *Haimeophyllum ordinatum*.

- Billings, E.** Notes on the structure of the Crinoidea, Cystidea, and Blastoida. < *Canad. Nat.*, new ser., vol. iv, pp. 277-293, with 16 woodcuts, and pp. 426-433, with 7 woodcuts; also, *ibid.*, vol. v, pp. 180-193, with 14 woodcuts. 1859 and 1860.

- Billings, E.** On some new species of fossils from the Limestone near Point Levis opposite Quebec. < *Canad. Nat.*, vol. v, pp. 301-324, with 30 engravings. 1860.

This memoir deals with the fossils found in four limestones which are exposed at Point Levis, near Quebec, 64 species being known, but only the *Trilobites* being here described. The new species described are 3 of *Agnostus*, 1 of *Oonocephalites*, 6 of *Dikellocephalus*, 2 of *Arionellus*, 2 of *Monocephalus*, 8 of *Baihyurus*, 2 of *Cheirurus*, and 2 of *Asaphus*.

- Billings, E.** Description of some new species of fossils from the Lower and Middle Silurian Rocks of Canada. < *Canad. Nat.*, vol. v, pp. 49-69, with 12 engravings. [Extracted from the *Report of the Geological Survey of Canada for 1860.*] 1860.

Describes 7 species of *Strophomena*, of which 6 are new, and 5 new species of *Trilobites*.

- Billings, E.** New species of fossils from the Lower Silurian Rocks of Canada. < *Canad. Nat.*, vol. v, pp. 161-177, with 20 engravings. [Extracted from *Report of the Geological Survey of Canada for 1860.*] 1860. X 60

Sixteen new species are described in this memoir, 10 of these being Gasteropods and 6 Cephalopods.

- Billings, E.** On the Devonian fossils of Canada West. < *Canad. Journ.*, new ser., vol. v, pp. 249-292, and vol. vi, pp. 133-143, 253-274, and 329-363, plate i, and 133 woodcuts. 1860.

This is really a continuation of the memoir just noticed. Eleven additional species of Corals are described, belonging to the genera *Striatopora* (2 sp.), *Trachypora* (1 sp.), *Alveolites* (4 sp.), *Diphyphyllum* (1 sp.), *Heliophyllum* (1 sp.), *Chonophyllum* (1 sp.), and *Cyathophyllum* (1 sp.). The *Brachiopoda* of the Corniferous and Hamilton formations are next treated of with great fulness; the characters of many of the genera being minutely discussed. Forty-three species of Brachiopods are determined, of which 30 are previously recorded forms, whilst 13 are described as new species. In the class of the *Lamellibranchiata*, the characters of the genus *Cyrtodonta* and its synonymy are treated at length, and a new Corniferous Bivalve of the subgenus *Vanuxemia* is described under the name of *V. tompkinsi*. Three new species of Gasteropods are recorded, and, amongst Cephalopods, two new forms of *Cyrtoceras*. The occurrence of 9 species of *Trilobites* and 2 of *Ieperditia* in these deposits is finally noted.

- Billings, E.** On some of the rocks and fossils occurring near Philipsburg, Canada East. < *Canad. Nat.*, vol. vi, pp. 310-328, with 6 engravings. 1861.

Describes the rocks near Philipsburg, and the fossils contained in them. From strata of the age of the Calcareous a number of fossils were obtained, of which *Camerella calcifera*, *Ecculiomphalus canadensis*, *E. intortus*, *E. spiralis*, and *Amphion salteri* are described as new species.

82 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Billings, E. On the occurrence of Graptolites in the base of the Lower Silurian. < *Canad. Nat.*, vol. vi, pp. 344-348. 1861.

Deals with the different forms of *Graptolites* found in the different members of the Silurian System in various parts of the world, with especial reference to the bearing of these fossils on the question as to the age of the Quebec Group.

50 - **Billings, E.** New species of Lower Silurian fossils. Montreal, 1861. pp. 24, with 25 engravings.

In this pamphlet (subsequently republished in the same author's *Palaëozoic Fossils*, vol. i, 1865), Mr. Billings describes a number of fossils from the Potsdam Sandstone, Calcareous, Chazy, Black River, and Trenton formations. The genus *Archeocyathus* (doubtfully referred to the Sponges) is proposed for some singular fossils from limestones at Anse au Loup, of the age of the Potsdam Group, the new genus *Obolella* for Brachiopods from the same formation, and the genus *Salterella* for Tubicolar *Annelides*, discovered in the same beds. Some Sponges from the Chazy Limestone are grouped together under the new generic title of *Eospongia*.

Billings, E. Remarks upon Prof. Hall's recent publication, entitled "Contributions to Palaëontology". < *Canad. Nat.*, vol. vii, pp. 389-393. 1862.

Chiefly a controversial paper, dealing with questions of priority. The last portion of the paper is a critical notice of certain points in which Mr. Billings considers that Mr. Hall's determinations and conclusions are not correct.

91 + **[Billings, E.]** Geological Survey of Canada. Report of progress from its commencement to 1863. pp. 983, with 498 wood-engravings. Montreal, 1863.

The greater portion of this classical work is occupied with the exposition of the geological structure of Canada; but numerous details are introduced by Mr. Billings as to the organic remains of each successive rock-formation. The fossils occurring in the typical sections of each formation are enumerated, and, though not described, very numerous illustrations are introduced for their elucidation. In an appendix, Mr. Billings gives a detailed catalogue of the Lower Silurian fossils of Canada (exclusive of those of the Quebec Group), the authority, reference, and geological range of each species being given. There is also a list of the *Graptolites* of the Quebec Group.

Billings, E. On the parallelism of the Quebec Group with the Llandeilo of England and Australia; and with the Chazy and Calcareous formations. < *Canad. Nat.*, vol. viii, pp. 19-39, with 4 engravings. 1863.

The object of this paper is to prove that the "Quebec Group" is truly referable to the Lower Silurian, and not to the "Primordial" formation. The evidence brought forward is mainly palæontological, though to some extent physical also. In conclusion, the author describes and figures a new species of *Harpes* (*H. dentoni*) from the Trenton Limestone of Ottawa, and a new *Cyrtina* (*C. euphemia*) from the Corniferous Limestone. The discovery of the calcareous spires of *Oyrtina* is also recorded.

Billings, E. Description of a new species of *Phillipsia*, from the Lower Carboniferous Rocks of Nova Scotia. < *Canad. Nat.*, vol. viii, pp. 209, 210, with woodcut. 1863.

The species is described under the name of *Phillipsia howi*.

Billings, E. On the genus *Stricklandia*;—proposed alteration of the name. < *Canad. Nat.*, vol. viii, p. 370. 1863.

The name *Stricklandia* being appropriated in fossil botany, the author changes the name of his genus to *Stricklandinia*.

Billings, E. Notice of some new genera and species of Palæozoic fossils. < *Canad. Nat.*, new ser., vol. ii, pp. 425-432. 1865.

Describes a number of species of Corals of the genera *Calapæcia*, *Heliolites*, *Favosites*, *Stenopora*, *Petrata*, *Zaphrentis*, *Eridophyllum*, and *Chonophyllum*, from the Middle Silurian of Anticosti and the Clinton Formation of Manitoulin Island. The genus *Calapæcia* is founded for Corals resembling *Heliolites*, but with twice as many septa and with mural pores.

Billings, E. Palæozoic fossils. Volume i. Containing descriptions and figures of new or little known species of organic remains from the Silurian Rocks. 1861-65. < *Geological Survey of Canada*. Montreal, 1865. 8°. pp. 426, with 401 engravings. X⁶⁰

The first portion of this report (pp. 1-24) was published in 1861, and the principal changes that it has been subjected to in reprinting are that the discovery of spicules in *Archæocyathus* is noted, *A. profundus* is founded for specimens originally referred to *A. minganensis*, *Olenellus* is adopted instead of *Paradoxides*, and *Kutorgina* is inserted in the name of *Obolleta cingulata*.

The second portion (pp. 25-56) was originally published in January, 1862, and deals with new species of fossils, mostly Gasteropoda, Lamellibranchs, and Brachiopoda, from the Calcareous, Chazy, Black River, and Trenton formations. The new genus *Artroclema* is proposed for a branched *Polyzoön* (?) from the Trenton Limestone.

The third portion (pp. 57-168) was originally published in June, 1862; but pp. 57-66 are here added to the reissue, and embrace a Palæontological analysis of the fossils of the Quebec Group or Lévis Formation, as bearing on the stratigraphical relations of this deposit. The remaining portion (pp. 67-168) is occupied with descriptions of new species of fossils from the Quebec Group (pp. 67-96), and from different parts of the Lower, Middle, and Upper Silurian Rocks of Canada (pp. 96-168).

The fourth portion of the work (pp. 169-344) was originally issued in February, 1865, and the remainder (pp. 345-420) was issued with the complete work in October, 1865. These two sections of the report are occupied with detailed descriptions of the new species of fossils collected by the officers of the Geological Survey of Canada in the Lower Palæozoic formations of that country, from the Quebec Group to the Guelph Limestones, inclusive; but it would not be possible here to give any detailed analysis of the varied matter contained in the pages of this important work. It may be noted, however, that a large amount of space is devoted to the description of the fossils of the Quebec Group, and that a considerable number of species are characterised from this formation in Newfoundland.

Billings, E. Catalogue of the Silurian fossils of the Island of Anticosti, with descriptions of some new genera and species. pp. 93, with 28 engravings. < *Geological Survey of Canada*. Montreal, 1866. K⁶⁰

In the first portion of this report (pp. 5-28), the author catalogues the Lower Silurian (Hudson River Group) fossils of the Island of Anticosti. The list comprises 118 species, including 28 forms which are now described for the first time. The second portion of the report (pp. 29-72) deals with the fossils of the "Anticosti Group" of rocks (Middle Silurian), enumerating 182 species; the new species, to the number of 76, being described at length. In an appendix (pp. 72, 73), some additional fossils from the Hudson River Group are considered, the new genus *Serichnites* being proposed for some curious tracks. An additional section (pp. 75-82) gives a general review of the palæontological relations of the Silurian deposits of Anticosti, and their relations to the Silurian formations of other regions in North America and Europe. Finally, a section is devoted to the description (pp. 82-93) of some new Cephalopods, Cystideans, and Corals from the Clinton and Niagara formations. Twenty-four new species are described, and the generic name of *Streptoceras* is proposed for Cephalopods with the form of *Oncoceras* combined with the trilobed aperture of *Phragmoceras*.

Billings, E. On the classification of the sub-divisions of McCoy's genus *Athyris*, as determined by the laws of zoological nomenclature. < *Ann. and Mag. Nat. Hist.*, ser. 3, vol. xx, pp. 233-247. 1867.

Reprinted from *Amer. Journ. Sci. and Arts*, July, 1867.

84 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Billings, E. Description of two new species of *Stricklandinia*. < *Geological Magazine*, Dec. 1, vol. v, pp. 59-64, pl. iv. 1868.

The new species described are *Stricklandinia davidsoni* and *S. salterii*, both from the "Anticosti Group".

Billings, E. Note on the structure of the Blastoidea. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. iv, p. 76, 1869.

Reprinted from *Silliman's Amer. Journ.*, May, 1869.

[**Billings, E.**] Note on the Blastoidea. < *Canad. Nat.*, new ser., vol. iv, pp. 89, 90. 1869.

Billings, E. Notes on some specimens of Lower Silurian Trilobites. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxvi, pp. 479-486, plates xxxi and xxxii. 1870.

The author describes (1) a specimen of *Asaphus platycephalus*, from the Trenton Limestone of Canada, showing the under side of the body, together with what appear to be the bases of eight pairs of legs; (2) specimens of several American species of *Asaphus*, showing "Panderian organs"; (3) a rolled-up specimen of *Calymene senaria* filled with small ovate bodies. The author also discusses the nature of *Protichnites* and *Olimactichnites*, and concludes that these tracks have really been produced by Trilobites.

Billings, E. Notes on the structure of the Crinoidea, Cystoidea, and Blastoidea. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. v, pp. 251-266 and 409-416, and vol. vii, pp. 142-158, with numerous engravings. 1870-71.

An elaborate paper on the above subject. Amongst the special points treated of are the position of the mouth in relation to the ambulacral system; the nature of the pectinated rhombs and calicine pores of the Cystoidea; the structure of *Oodaster* McCoy, and of *Pentremites*; the homologies of the respiratory organs of the Palæozoic and recent Echinoderms; the "convoluted plate" of the Crinoidea; the structure of the calyx in *Pentremites* and *Nucleocrinus*; the resemblances between the Cystoids, Blastoids, and Crinoids on the one hand and the larvæ of the Asteroids on the other hand; and the nature and relations of the oral, anal, ovarian, and ambulacral openings. The forms upon which the author has founded his observations are American.

Billings, E. Note on *Trimerella acuta*. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. viii, pp. 140, 141. 1871.

Reprinted from *Amer. Journ. Sci. and Arts*, June, 1871.

Billings, E. On some new species of Palæozoic fossils. < *Canad. Nat.*, new ser., vol. vi, pp. 213-222, with 2 engravings. 1871.

Describes three new species of *Hyalithes* (*Theca*) from the Silurian of Canada, and changes *Theca triangularis*, Hall, to *Hyalithes americanus*. Defines the genus *Obolella*, and describes as new species *O. gemma* and *O. circe*. Also founds the genus *Monomerella*, and characterises two species.

Billings, E. Remarks on the Taconic controversy. < *Canad. Nat.*, new ser., vol. vi, pp. 313-325. 1871.

A discussion of the position of the "Taconic Rocks" of Emmons, chiefly from a palæontological point of view, and as connected with questions of priority.

Billings, E. On the genus *Obolellina*. < *Canad. Nat.*, new ser., vol. vi, pp. 326-331, with 7 woodcuts. 1871.

Gives an extended definition of *Obolellina*, and describes *O. magnifica*, from the Black River Limestone, as new.

Billings, E. Additional notes on the Taconic controversy. < *Canad. Nat.*, new ser., vol. vi, pp. 460-465. 1871.

Billings, E. On some fossils from the Primordial Rocks of Newfoundland. < *Canad. Nat.*, new ser., vol. vi, pp. 465-479, with 14 engravings. 1871.

From rocks of Primordial age in Great Bell Island, *Lingula murrayi*, *Lingulella? affinis*, *L. (?) spissa*, and *Cruziana similis* are described as new. From Menevian strata *Obolella? miser*, *Straparollina remota*, *Hyolithes excellens*, *Agraulos socialis*, *A. affinis*, *Solenopleura communis*, *Anopolenus venustus*, *Paradoxides tenellus*, *P. decorus*, *Iphidea bella*, *Stenotheca pauper*, and *Scenella reticulata* are described as new. *Iphidea* is proposed as a new genus for small Brachiopods allied to *Acrotreta* and *Kutorgina*; and *Scenella* for Gasteropods allied to *Metoptoma*. *Aspidella terranovica* is the name given to some curious fossils from the Huronian of St. John's, associated with *Arenicolites spiralis*.

Billings, E. Note on the discovery of fossils in the "Winooski Marble" at Swanton, Vt. < *Canad. Nat.*, new ser., vol. vi, p. 351. 1871.

Notes the discovery of *Salterella* in the "Winooski Marble", showing this rock to be of the age of the Belle Isle Limestone.

Billings, E. On the Mesozoic fossils from British Columbia. < *Geological Survey of Canada: Report of Progress for 1872-73*. Appendix ii, pp. 71-75. 1873. X

This memoir contains notes on the Mesozoic fossils collected by Mr. James Richardson in British Columbia in 1872. There is also a table showing the geological horizons of the Mesozoic Rocks of British Columbia as compared with those of England, Nebraska, and California.

Billings, E. Palæozoic fossils. Vol. ii, part i. pp. 144, with 85 woodcuts and 9 plates. < *Memoirs of the Geological Survey of Canada*. Montreal, 1874. X

The first section of this work contains descriptions of the fossils of the "Gaspé Series", some of the beds of which are Upper Silurian and some Devonian, with an intermediate group that may be regarded as passage-beds. The new species determined from this series comprise 5 species of Corals, 3 of Polyzoa, 18 of Brachiopoda, 10 of Lamellibranchs, 8 of Gasteropods, and 1 Trilobite. The next section gives descriptions of fossils obtained from the Primordial Rocks of Bell Island, Newfoundland, the exact position of these deposits being somewhat uncertain. Descriptions of some of these forms had been previously published (*Canad. Nat.*, 1872); but six are new species. From beds inferior to those of Bell Island, and thought to be referable to the Lower Lingula Fiags or Menevian Group, eleven new species of fossils are described. From the Huronian Rocks of St. John's, Newfoundland, the author describes *Aspidella terranovica*, *Stenotheca pauper*, and *Scenella reticulata*—the last two being small patelliform Gasteropods, whilst the affinities of the first are uncertain.

The author next discusses the characters of the genus *Stricklandinia*, describing five previously recorded species and a single new form (*S. melissa*). The next portion of the work is occupied with a discussion of the structure of the *Grinoidea*, *Oystoidea*, and *Blastoidea*. This section was originally published in the *Amer. Journ. Sci. and Arts*, 1869-70, and the *Ann. and Mag. Nat. Hist.*, 1870-71, and it is reproduced here with some corrections and additions. Finally, the author describes 18 new species of *Lamellibranchiata* from the Arisaig series (Upper Silurian) of Nova Scotia. The new genus *Pteronitella* is proposed for forms like *Pterinea retroflexa*, and 3 species are referred to it.

Billings, E. On some new or little known fossils from the Silurian and Devonian Rocks of Canada. < *Canad. Nat.*, new ser., vol. vii, pp. 230-240, with 2 figures. 1874.

Describes *Aulocopina granti*, a new genus and species of fossil sponges from the Niagara formation. The genus *Heterophrentis* is proposed for Corals of the type of *Zaphrentis prolifica* Bill. Species of *Amplexus*, *Zaphrentis*, *Gyroceras*, *Orthoceras*, and *Lichas* are described from the Devonian of Ontario. Finally, some changes of nomenclature are noted.

86 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Billings, E. On some new genera and species of Palæozoic Mollusca. < *Canad. Nat.*, new ser., vol. vii, pp. 301, 302, with 2 figures. 1875.

Founds the new genus *Illionia* for *Tellina prisca* Hla., *Anatina sinuata* Hall, and the new *I. canadensis* from the Upper Silurian of the Bay of Chaleur. The genus *Pteronitella* is proposed for forms of the type of *Pterinea retroflexa*.

Bouvé, M. *Pygorhynchus gouldii*, a new Echinus from the Millstone Grit of Georgia. < *Ann. and Mag. Nat. Hist.*, ser. 1, vol. xix, p. 142. 1847.

A reprint from *Silliman's Journal*, May, 1847, p. 437.

Bradley, Frank H. Description of a new Trilobite from the Potsdam Sandstone, with a note by E. Billings. < *Canad. Nat.*, vol. v, pp. 420-425, with 4 engravings. 1860.

This paper by Mr. Bradley is reprinted from *Silliman's Journal*, 2d ser., vol. xxx, p. 241, and describes and figures a new Trilobite from the Potsdam Sandstone of Keeseville, N. Y., under the name of *Conocephalites minutus*. Mr. Billings adds a note discussing the characters of this species, and noting the other forms of the genus known to occur in Canada. Mr. Billings also appends an additional note (reprinted from *Silliman's Journal*, November, 1870), describing some new specimens of *Conocephalites minutus*, in which fresh characters are exhibited.

Brady, G. S., and H. W. Crosskey. Notes on fossil Ostracoda from the Post-Tertiary deposits of Canada and New England. < *Geological Magazine*, Decade I, vol. viii, pp. 60-65, plate ii. 1871.

The authors notice 33 species of Ostracoda from the above-mentioned deposits, of which *Cythere cuspidata*, *C. maccheoneyi*, *C. logani*, *Ocytherura granulosa*, *C. cristata*, and *Ocytheropteron complanatum* are described for the first time.

Brady, Henry B. A monograph of Carboniferous and Permian Foraminifera (the genus *Fusulina* excepted). < *Palæontographical Society*, 1876, pp. 1-166, plates i-xii.

This work is necessarily principally concerned with British forms, but not exclusively so. At page 47 is a summary of geological localities in North America which have yielded Carboniferous or Permian Foraminifera. The following forms are described from the Carboniferous Rocks of North America:—*Valvulina palæotrochus* Ehrb., *V. decurrens*, *V. plicata* Brady, *V. bulloides*, n. sp., *V. rudis*, n. sp., *No losinella priscilla* Dawson, *Calcarina ambigua*, n. sp., and *Endothyra bowmani* Phill. The last is shown to be the subsequently described *Rotalia baileyi* Hall, from the Spergen Hill Limestone of Indiana.

Brongniart, Adolphe. Histoire des Végétaux Fossiles. Tom. i. Pl. vi, pp. 70, 71. 1824-48.

The fossils described by Brongniart under the names *Fucoides dentatus* and *Fucoides acris*, from the Quebec Group of Point Lévis, are really *Graptolites*; the former being the *Graptolithus* [*Diplograptus*] *pristiniformis* of Hall, and the latter the *G.* [*Tetragraptus*] *bryonoides* of the same author.

Bronn, H. G. Lethæa Geognostica, oder Abbildung und Beschreibung der für die Gebirgsformationen bezeichnendsten Versteinerungen. [Figures and descriptions of the characteristic fossils of the great formations.] 1st ed., 1835; 3d ed. (Bronn & Roemer), 1851-56. 3 vols. 8°. With atlas.

Describes many species of American fossils.

Buckland, William. "Geology", in "Voyage, &c., to the Pacific and Behring's Straits, performed in H. M. S. 'Blossom'", by Captain Beechey. 4°. London, 1839. p. 157.

In the geological appendix to Capt. Beechey's work, Prof. Buckland notices the resemblance of the Carboniferous Limestone of Cape Thomson, northwest of America, lat. 67° 6' N. long. 163° 45' W., to that of Derbyshire, and refers to its fossil contents.

Burmeister, Hermann. The organisation of Trilobites, deduced from their living affinities, with a systematic review of the species hitherto described. Edited from the German by Professors Bell and Forbes. *Ray Society*, 1846. pp. 136, with 6 plates. X

Describes several species of North American *Trilobites* and two species of *Eurypterus*.

Carpenter, Philip P. On the Pleistocene fossils collected by Col. E. Jewett at Sta. Barbara (California); with descriptions of new species. < *Ann. and Mag. Nat. Hist.*, ser. 3, vol. xvii, pp. 274–278. 1866.

The new species described are *Turritella jecettii*, *Bitium* ? *asperum*, *B. armillatum*, *Opalia* (? *crenatoides*, var.) *insculpta*, *Trophon tenuisculptus*, and *Pisania fortis*.

Carpenter, W. B. Additional note on the structure and affinities of *Eozoön canadense*. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxi, pp. 59–66, plates viii, ix, and woodcut. 1865.

The author in this memoir gives a full description of the structure of *Eozoön canadense* as elucidated by him, and in support of the views expressed by Principal Dawson (*Quart. Journ. Geol. Soc.*, vol. xxi, p. 51). The affinities of *Eozoön* with recent *Foraminifera* are also fully discussed.

Carpenter, W. B. *Eozoön canadense*. < *Intellectual Observer*, No. xl, p. 300. 1865. O

[Not seen by the writer.]

Carpenter, W. B. Notes on the structure and affinities of *Eozoön canadense*. < *Canad. Nat.*, new ser., vol. ii, pp. 111–119. 1867.

A reprint from *Quart. Journ. Geol. Soc. Lond.*, 1865.

Carpenter, W. B. Further observations on the structure and affinities of *Eozoön canadense*. In a letter to the president. < *Proc. Roy. Soc. Lond.*, vol. xv, pp. 503–508. 1867.

A résumé of the state of the *Eozoön* controversy at the time (1867).

Carpenter, W. B. New observations on *Eozoön canadense*. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiii, pp. 456–470, with 2 engravings. 1874.

The author treats more especially of the nummuline layer and the canal-system of the "intermediate skeleton", and concludes by summarising the *general* evidence in favour of the organic origin of *Eozoön*.

Carpenter, W. B. Final note on *Eozoön canadense*. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiv, pp. 371, 372. 1874.

Carpenter, W. B. Remarks on Mr. H. J. Carter's letter to Prof. King on the structure of the so-called *Eozoön canadense*. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiii, pp. 277–284, with 2 engravings. 1874.

A recapitulation of the principal facts in support of the belief that *Eozoön canadense* is a *Foraminifer*.

Carpenter, W. B. Further researches on *Eozoön canadense*. < *Rep. Brit. Assoc. for 1874, Sections*, pp. 136, 137. 1875.

Carpenter, W. B. Notes on Otto Hahn's "Microgeological Investigation of *Eozoön canadense*". < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xvii, pp. 417–422. 1876.

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- Carter, H. J.** On the structure called *Eozoön canadense* in the Laurentian Limestone of Canada. (A letter to Prof. W. King.) < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiii, pp. 189-193. 1874.

Gives reasons for believing that *Eozoön* is not of organic origin.

- Carter, H. J.** On the structure called *Eozoön canadense* in the Laurentian Limestone of Canada. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiii, pp. 376-378, with 1 engraving. 1874.

- Carter, H. J.** Relation of the Canal-system to the Tubulation in the Foraminifera, with reference to Dr. Dawson's 'Dawn of Life'. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xvi, pp. 420-424. 1875.

Discusses the minute structure of the test of recent *Foraminifera*, as bearing on the nature of *Eozoön canadense*.

- Casseday, S. A.** Beschreibung eines neuen Crinoiden-Geschlechtes aus dem Kohlenkalkstein Nord-Amerikas. < *Zeitschrift d. Deutsch. Geol. Ges.*, Bd. vi, pp. 237-242, plate ii. 1854.

The author proposes and defines the genus *Batocrinus* for two new species (*B. icosadactylus* and *B. irregularis*) from the Carboniferous Limestone of Indiana.

- Castelnau, F. de.** Essai sur le Système Silurien de l'Amérique Septentrionale. Paris, 1843. pp. 56. With 17 plates.

In this work, the author describes a number of Crustaceans, Cephalopods, Gasteropods, Brachiopods, Conchifera, Corals, Crinoids, &c., from the Silurian of North America. A large number of species are described as new, but many of these have been subsequently identified with previously recorded forms.

- C[hapman], E. J.** *Asaphus canadensis*. < *Canad. Journ.*, new ser., vol. i, pp. 482, 483. 1856.

Confers the name of *Asaphus canadensis* on a new *Trilobite* from the Utica Slate.

- Chapman, E. J.** A review of the *Trilobites*: their characters and classification. < *Canad. Journ.*, new ser., vol. i, pp. 271-286. 1856.

A general review of the order *Trilobita*.

- C[hapman], E. J.** *Asaphus latimarginatus*. < *Canad. Journ.*, new ser., vol. ii, pp. 47, 48. 1857.

Discusses a question raised by Prof. Hall as to the identity of the author's *Asaphus canadensis* with the previously described *A. latimarginatus* Hall, and fully describes the characters of the former.

- Chapman, E. J.** On the occurrence of the genus *Cryptoceras* in Silurian Rocks. < *Canad. Journ.*, new ser., vol. ii, pp. 264-268. 1857.

Notes the occurrence of the genus *Cryptoceras* in the Black River Limestone of Lorette in Eastern Canada.

- Chapman, E. J.** On the occurrence of the genus *Cryptoceras* in Silurian Rocks. < *Ann. and Mag. Nat. Hist.*, ser. 2, vol. xx, pp. 114-117. 1857.

Notes the occurrence in the Lower Silurian Rocks of Canada of a species of *Cryptoceras* [*Lituites*].

- C[hapman], E. J.** *Trinnucleus concentricus*. < *Canad. Journ.*, new ser., vol. iii, pp. 414, 415, with woodcut. 1858.

Describes the glabella of a specimen of the above *Trilobite* from the Trenton Limestone near Quebec, which shows peculiar basal and central tubercles.

Chapman, E. J. On some new Trilobites from Canadian Rocks. < *Ann. and Mag. Nat. Hist.*, ser. 3, vol. ii, pp. 9-16, with 2 woodcuts. 1858.

Maintains the distinctness of *Asaphus canadensis* Chapm., which the author had previously described, by an analysis of the other known species of the genus. The name *Asaphus halli* is proposed for a second form, from the Trenton Limestone of Peterborough, Ontario.

Chapman, E. J. On some new Trilobites from Canadian Rocks. < *Canad. Journ.*, new ser., vol. iii, pp. 230-238, with 2 woodcuts. 1858.

Describes and figures as new species *Asaphus canadensis* from the Utica Slate and *A. halli* from the Trenton Limestone.

Chapman, E. J. On the Hypostoma of *Asaphus canadensis*, and on a third new species of *Asaphus* from the Canadian Rocks. < *Canad. Journ.*, new ser., vol. iv, pp. 1-4, with 2 woodcuts. 1859.

The new species is from the Utica Slate, and is named *Asaphus hincksii*.

Chapman, E. J. Presence of *Columnaria alveolata* and *Stromatocerium rugosum* in Trenton Limestone. < *Canad. Journ.*, new ser., vol. iv, p. 493. 1859.

Notes the discovery of the above-mentioned species in the Trenton Limestone of the neighbourhood of Belleville, Ont.

Chapman, E. J. On a new species of *Agelacrinites*, and on the structural relations of that genus. < *Ann. and Mag. Nat. Hist.*, ser. 3, vol. vi, pp. 157-162, with woodcut. 1860.

Describes *Agelacrinites billingsii*, from the Trenton Limestone of Peterborough, Canada West.

Chapman, E. J. Notes on the Geology of the Blue Mountain Escarpment in Collingwood Township, Canada West. < *Canad. Journ.*, new ser., vol. v, pp. 304, 305. 1860.

Contains notes on the fossils (Utica Slate and Hudson River Group).

Chapman, E. J. On the geology of Belleville and the surrounding district. < *Canad. Journ.*, new ser., vol. v, pp. 41-48. 1860.

Gives lists of, and notes on, the fossils of the Trenton Limestone of Belleville, Ont.

Chapman, E. J. *Agelacrinites billingsii*: a new species: preliminary notice. < *Canad. Journ.*, new ser., vol. v, pp. 204, 205. 1860.

Chapman, E. J. On a new species of *Agelacrinites*, and on the structural relations of that genus. < *Canad. Journ.*, new ser., vol. v, pp. 358-365, with woodcut. 1860.

The author describes a new species of *Agelacrinites* from the Trenton Limestone of Peterborough, Ont., under the name of *A. billingsii*. The structure and systematic relations of the genus are discussed, and the author proposes to found for its reception, along with *Edrioaster*, a new order, which he terms *Thyroida*.

Chapman, E. J. A popular exposition of the Minerals and Geology of Canada. < *Canad. Journ.*, new ser., vols. v, vi, vii, and viii, with 248 engravings. 1860-63.

Part iv of this series of papers (*loc. cit.*, vol. vi, pp. 500-518, vol. vii, pp. 108-121, and vol. viii, pp. 17-33) gives a general account of the fossils of Canada; and part v (vol. viii, pp. 111-127, 185-216, and 437-462) gives a review of the successive stratified formations of Canada and their characteristic organic remains.

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- + **Chapman, E. J.** An outline of the Geology of Canada, based on a subdivision of the provinces into natural areas. 8°. pp. 104, with 12 plates and maps. Toronto, 1876.

Contains notes on the organic remains of the different geological formations of Canada, with six plates illustrating the more characteristic fossils.

- Chapman, E. J.** On the probable nature of the supposed fossil tracks known as *Protichnites* and *Climactichnites*. < *Canad. Journ.*, new ser., vol. xvi, pp. 7. 1877.

The author gives reasons for believing *Protichnites* and *Climactichnites*, from the Potsdam Sandstone, are not the tracks of Crustaceans, but the impressions of large *Fucoids*.

- o + **Cleve, P. T.** On the geology of the North-eastern West India Islands. < *Kongl. Svenska Vetenskaps-Akad. Handl.*, Bd. ix, No. 12, pp. 48, with 2 plates. 1870.

Contains numerous notes on the fossils.

- Cotteau, G.** Sur les Oursins des Antilles suédoises. < *Bull. de la Soc. Géol. de France*, sér. 3, t. ii, pp. 125, 126. 1875.

A preliminary note, drawing attention to the fact that the Miocene Echinoids of the Antilles have a close resemblance to those derived from the same beds in Malta and other Mediterranean islands.

- Cotteau, —.** Echinids of the West Indies. < *Kongl. Svenska Vetenskaps-Akad. Handl.*, Bd. xiii, No. 6. 1875.

[Not seen by the writer.]

- Credner, G. R.** *Ceratites fastigiatus* and *Salenia texana*. < *Zeitschrift für d. gesammten Naturwiss.*, Bd. xii, pp. 105-116, pl. v. 1875.

Describes *Salenia texana* from the Cretaceous (?) deposits of Texas.

- + **Credner, Hermann.** Die vor-silurischen Gebilde der oberen Halb-Insel von Michigan. < *Zeitschr. der Deutsch. Geol. Ges.*, Bd. xxi, pp. 516-559. 1869.

- Credner, Hermann.** Die Kreide von New Jersey. < *Zeitschr. der Deutsch. Geol. Ges.*, vol. xxii, pp. 191-251, pl. iv. 1870.

A considerable section of this memoir is devoted to the description of the fossils met with in the Cretaceous deposits of New Jersey, and another deals with their vertical extension and stratigraphical relations.

- ↪ **Dana, J. D.** On the supposed legs of the Trilobite, *Asaphus platycephalus*. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. vii, pp. 366-368. 1871.

An advance copy of an article published in the *Amer. Journ. Sci. and Arts*, May, 1871.

- + **D'Archiac, —.** Note sur l'existence des restes organiques dans les Roches Laurentiennes du Canada. < *Comptes Rendus*, vol. liii, pp. 192-194. 1865.

A note presented by M. D'Archiac on the part of Dr. W. B. Carpenter as to the discovery of *Eozoön canadense*.

- D'Archiac, Viscount, and Édouard de Verneuil.** On the fossils of the older deposits in the Rhenish Provinces; preceded by a general survey of the fauna of the Palæozoic Rocks, and followed by a tabular list of the organic remains of the Devonian System in Europe. < *Trans. Geol. Soc. Lond.*, ser. 2, vol. vi, part ii, pp. 303-310. 4°. 1842.

In the classified list supplied by the authors of the fossils of the older deposits of the Rhenish Provinces, and of the Devonian system of Europe generally, many species are determined as occurring in corresponding deposits in North America.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 91

- Davidson, Thomas.** On the Lower Carboniferous Brachiopoda of Nova Scotia. < *Quart. Journ. Geol. Soc. Lond.*, vol. xix, pp. 158-175, pl. ix. 1863.

Fourteen species are described and figured, the following being new :—*Rhynchonella dawsoniana* and *R. acadensis* (n. sp.?).

- Davidson, Thomas, and William King.** Remarks on the genera *Trimerella*, *Dinobolus*, and *Monomerella*. < *Geological Magazine*, Decade I, vol. ix, pp. 442-445; also, *Ann. and Mag. Nat. Hist.*, ser. 4, vol. x, pp. 248-252. 1872.

This memoir, in which the authors found and define the family *Trimerellida*, is largely based upon American material.

- Davidson, Thomas, and William King.** On the *Trimerellida*, a Palæozoic family of the Palliobranchs or Brachiopoda. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxx, pp. 124-172, pls. xii-xix. 1874.

This memoir treats exhaustively of the *Trimerellida*, and is principally founded upon American material. The following American species are fully described :—*Trimerella grandis*, *T. acuminata*, *T. billingsii*, *T. (?) galtensis*, *T. ohioensis*, *T. dalli*, *Monomerella prisca*, *M. orbicularis*, *Dinobolus conradi*, *D. canadensis*, and *D. magnifica*.

- Dawson, G. M.** Report on the Tertiary Lignite Formation in the vicinity of the 49th Parallel. < *British North American Boundary Commission, Geological Report of Progress for the year 1873*. 8°. Montreal, 1874. pp. 31, pls. i and ii. X ac

The fossils of this formation are noticed. The Invertebrates are fresh-water and brackish-water in type.

- Dawson, G. M.** Note on the occurrence of Foraminifera, Coccoliths, &c., in the Cretaceous Rocks of Manitoba. < *Canad. Nat.*, new ser., vol. vii, pp. 252-257. 1874.

The author examined the Cretaceous Rocks of Pembina Mountain, some of which resembled the "chalk" of Nebraska in appearance and texture. The earthy base of this deposit consisted principally of *Foraminifera*, Coccoliths, and allied organisms. The author describes and figures *Textularia globulosa*, *T. pygmaea*, *Discorbina globularis*, *Planorbulina ariminensis*, and forms of Coccoliths and Rhabdoliths.

- Dawson, G. M.** Report on the geology and resources of the region in the vicinity of the Forty-ninth Parallel, from the Lake of the Woods to the Rocky Mountains; with lists of plants and animals collected, and notes on the fossils. pp. 379, with 18 plates and 3 maps. 1875. X

There are notes on the fossils collected (mostly plants and vertebrates), and amongst these may be mentioned the microscopic organisms (*Foraminifera*, &c.) detected by the author in the Cretaceous Rocks of the Pembina escarpment and other localities.

- Dawson, J. W.** On the Coal-Measures of the South Joggins, Nova Scotia. < *Quart. Journ. Geol. Soc. Lond.*, vol. x, pp. 1-42. 1854.

The invertebrate fossils are noticed at p. 39, and some of the Lamellibranchs are figured (figs. 22-25).

- Dawson, J. W.** Acadian Geology. The geological structure, organic remains, and mineral resources of Nova Scotia, New Brunswick, and Prince Edward Island. 1st ed. 1854; 2d ed. 1868. 8°. pp. 694, with 231 engravings. Vibro

Considerable portions of this work are devoted to the Invertebrate fossils of the region treated of. In Chapter V, the author gives an account of the Post-Pliocene deposits and their fossils. In Chapter XII (pp. 202-209), the *Mollusca*, *Annelida*, and *Crustacea* of the

92 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Coal-Measures are treated of. In Chapter XVI (pp. 235-314), the author gives an account of the fossils of the Carboniferous Limestone, describing as new *Lithostroia pictoense*, *Zaphrentis minas*, *Cyathophyllum billingsi*, *Stenopora exilis*, *Fenestella lyelli*, *Rhynchonella ida* Hartt, *R. evangelina* Hartt, *Centronella anna* Hartt, *Modiola pooleri*, *M. avonia*, *Pteronites gayensis*, *Macrodon hardingi*, *M. curtus*, *M. ? shubenacadiensis*, *Edmondia hartii*, *E. anomala*, *Cypricardia insecta*, *Pleurophorus quadricostatus*, *Cardinia subangulata*, *C. antigonesensis*, *Arca punctifer*, *Aviculopecten lyelli*, *A. reticulatus*, *A. simplex*, *A. cora*, *A. hebertianus*, *Conularia planicostata*, *Euomphalus exortinus*, *Naticopsis dispassa*, *Platyschisma dubia*, *Lozonema acutula*, *Murchisonia gypsea*, *M. tricingulata*, *Pleurotomaria dispersa*, *P. ignobilis*, *Nautilus avonensis*, *Gyroceras hartii*, *Orthoceras dilatatum*, *O. vindobonense*, *O. perstrictum*, *Spirorbis angulatus*, *Serpulites hortonsensis*, *S. annulatus*, *S. inelegans*, and *Beyrichia jonesii*. In Chapter XVII (pp. 383-398), the Pulmonate Molluscs, Myriapods, and Insects of the Nova Scotia Coal-Formation are described. At pp. 523-526 is an account of the Crustaceans and Insects of the Devonian, the latter (like the Insects of the Carboniferous) being described by Mr. Scudder. In Chapter XXIII are notices and lists of the Upper Silurian fossils, *Dictyonema websteri* being figured as new. Descriptions of the Upper Silurian fossils (pp. 594-610) are given, principally as published by Prof. Hall in 1860, but some new forms are described. Finally, the author gives descriptions (pp. 611-657) of the Primordial fossils of the Acadian Group from MS. notes by Mr. Hartt, a number of new forms being characterised and figured.

Dawson, J. W. Supplement to the second edition of Acadian Geology, containing additional facts as to the geological structure, fossil remains, and mineral resources of Nova Scotia, New Brunswick, and Prince Edward Island. pp. 102, with 18 engravings. Montreal, 1878.

This supplement contains all the new matter in the 3d edition of the "Acadian Geology". There are various notes on, and figures of, invertebrate fossils from the Carboniferous and Silurian.

Dawson, J. W. Supplementary chapter to Acadian Geology. 12°. pp. 70. Edinburgh, 1860. With engravings.

Notices and figures fossils from the Carboniferous, Devonian, and Silurian formations.

Dawson, J. W. On the newer Pliocene and Post-Pliocene deposits of the vicinity of Montreal, with notices of fossils recently discovered in them. < *Canad. Nat.*, vol. ii, pp. 401-426, plate vii. 1857.

Contains a descriptive list of the Post-Pliocene deposits in the neighbourhood of Montreal.

Dawson, J. W. On the Lower Coal Measures as developed in British America. < *Quart. Journ. Geol. Soc. Lond.*, vol. xv, pp. 62-76. 1859.

Part III of this memoir treats of the fauna of the Lower Coal-Measures. The invertebrate remains noticed comprise *Entomostraca*, Annelide burrows and tracks (figs. 6 and 7), supposed Crustacean tracks (fig. 8), and a small Unio-like Bivalve.

Dawson, J. W. On a Terrestrial Mollusc, a Chilognathous Myriapod, and some new species of Reptiles, from the Coal-Formation of Nova Scotia. < *Quart. Journ. Geol. Soc. Lond.*, vol. xvi, pp. 268-277. 1860.

Having obtained numerous specimens, the author is here enabled to fully describe *Pupa vetusta* (figs. 1-3), previously characterised from a single specimen by Sir Charles Lyell (*Quart. Journ. Geol. Soc.*, vol. ix). *Xylobius sigillaria* is also fully described and figured (figs. 4-9).

Dawson, J. W. On the structure of certain organic remains in the Laurentian Limestones of Canada. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxi, pp. 51-59, pls. vi, vii. 1865.

The author gives a detailed description of the structure of the bodies described by Sir William Logan as being organic and as occurring in the Lower Laurentian Limestones

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 93

(*Quart. Journ. Geol. Soc.*, vol. xxi, p. 45). The generic name of *Eozoön* is proposed for these, and the single form described is discussed under the name of *Eozoön canadense*. The author further concludes that *Eozoön* is probably to be regarded as an ancient type of the *Foraminifera*.

- Dawson, J. W.** On the fossils of the genus *Rusophycus*. < *Canad. Nat.*, new ser., vol. i, pp. 363-367, and p. 458, with 4 woodcuts. 1866.

The author describes the general appearance and mode of occurrence of the fossils known as *Rusophycus*, and concludes that they are really casts of the burrows of *Trilobites*, on which view he proposes for them the generic name of *Rusichnites*. A new species is described and figured under the name of *R. adamicus*.

- Dawson, J. W.** On the discovery of a new Pulmonate Mollusc [*Zonites* (*Conulus*) *priscus* Cpr.] in the Coal-Formation of Nova Scotia, with a description of the species by Philip P. Carpenter, M. D. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxiii, pp. 330-333, with woodcut. 1867.

Dr. Dawson gives an account of the precise position in the Joggins section of the bed containing the *Zonites*, which is fully described and figured by Dr. Philip Carpenter.

- Dawson, J. W.** Notes on Post-Pliocene deposits at Rivière du Loup and Tadoussac. < *Canad. Nat.*, new ser., vol. ii, pp. 81-88. 1867.

Contains lists of and notes on the fossils.

- Dawson, J. W.** On certain organic remains in the Laurentian Limestones of Canada. < *Canad. Nat.*, new ser., vol. ii, pp. 99-111. 1867.

A reprint from the *Quart. Journ. Geol. Soc. Lond.*, 1865, with some additional notes. A short appendix to the paper follows at pp. 127, 128.

- Dawson, J. W.** Notes on fossils recently obtained from the Laurentian Rocks of Canada, and on objections to the organic nature of *Eozoön*, with notes by W. B. Carpenter, M. D., F. R. S. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxiii, pp. 257-265, pls. xi, xii. 1867.

In the first part of this memoir, Dr. Dawson gives an account of the general appearance and microscopic structure of a specimen of *Eozoön canadense*, found in the Laurentian Rocks at Tudor, in which the chambers of the skeleton are filled with a dark-coloured coarse limestone. The author next deals with certain specimens from Long Lake and Wentworth, and also from Madoc, and concludes by reviewing the objections brought forward by Professors King and Rowney to the organic nature of *Eozoön*. Dr. W. B. Carpenter adds a note on the appearances presented by thin slices of specimens of *Eozoön* in which the canal-system has been infiltrated with transparent carbonate of lime.

- Dawson, J. W.** On some remains of Palæozoic Insects recently discovered in Nova Scotia and New Brunswick. < *Geological Magazine*, Decade I, vol. iv, pp. 385-388, pl. xvii, figs. 1-5. 1867.

The author notes the occurrence of one Carboniferous and four Devonian insects, and appends descriptions of them by Mr. Scudder.

- Dawson, J. W.** On some remains of Palæozoic insects, recently discovered in Nova Scotia and New Brunswick. < *Canad. Nat.*, new ser., vol. iii, pp. 202-206, with 5 woodcuts. 1868.

The author notes the discovery of insect-remains in the Carboniferous and Devonian formations. The species described by Mr. Scudder are *Haplophlebia barnesi* (Carboniferous) and *Platephemera antiqua*, *Homothetus fossilis*, *Lithentomum harutti*, and *Xenoneura antiquorum*, from the Devonian.

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Dawson, J. W. Additional notes on the Post-Pliocene deposits of the St. Lawrence Valley. < *Canad. Nat.*, vol. iv, 1859, pp. 23-39, with 16 engravings. 1869.

The author describes and figures the *Foraminifera* and *Bryozoa* [*Polyzoa*] of the Post-Pliocene deposits of Lower Canada. Of the former 8 species, and of the latter 6 species are enumerated, of which *Lepralia quadricornuta* is described as new. The occurrence of fresh-water shells apparently really belonging to the same deposits is further noted.

Dawson, J. W. On the microscopic structure of some Canadian Limestones. < *Canad. Nat.*, vol. iv, pp. 161-169, with 6 woodcuts. 1869.

Treats of the microscopic constitution of the Trenton, Black River, and Chazy Limestones, showing that all of these are essentially of organic origin.

Dawson, J. W. Note on some new animal remains from the Carboniferous and Devonian of Canada. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxvi, p. 166. [Abstract.] 1870.

Deals chiefly with vertebrates, but notices some insect-remains from the Coal-Measures.

Dawson, J. W. On the Silurian and Devonian Rocks of Nova Scotia. < *Canad. Nat.*, vol. v, pp. 133-143. 1870.

This paper is principally a geological one, but the fossils of the various rock-groups are noted, and one new species, viz, *Dictyonema websteri* Hall, is figured.

Dawson, J. W. Notice of Tertiary fossils from Labrador, Maine, &c., and remarks on the climate of Canada in the newer Pliocene or Pleistocene period. < *Canad. Nat.*, vol. v, pp. 188-200, with 5 engravings. 1870.

Notifies a collection of fossils from the Post-Pliocene deposits of Tertiary Bay on the coast of Labrador, amongst which are several *Foraminifera*. The only new species is *Nonionina labradorica*. A collection of Post-Pliocene deposits from Portland, Maine, is also noticed, and the author likewise notices the occurrence of fresh-water shells in certain Post-Pliocene deposits.

Dawson, J. W. Notes on the Geology of Murray Bay, Lower St. Lawrence. < *Canad. Nat.*, vol. vi, pp. 138-151. 1871.

Contains lists of the fossils discovered. In a note at the end, Mr. Billings describes and figures as a new species *Lingula eva*, from rocks of the age of the Black River Limestone.

Dawson, J. W. Post-Pliocene Geology of Canada. < *Canad. Nat.*, new ser., vol. vi, pp. 19-42, 166-187, 241-259, 369-416. 1871.

A series of papers descriptive of the geological and palæontological features of the Post-Pliocene deposits of Canada, subsequently published in a collected form (Montreal, 1872).

Dawson, J. W. Notes on the Post-Pliocene Geology of Canada, with especial reference to the conditions of accumulation of the deposits and the marine life of the period. 8°. pp. 112, with 7 plates. Montreal, 1872.

Most of the matter of this work was originally published in the form of a series of papers in the *Canadian Naturalist* between 1857 and 1866, in Sir William Logan's *Report on the Geology of Canada* for 1863, and in the author's *Acadian Geology*. The present work summarises the facts and conclusions of the previous papers, adding a number of fresh facts, and correcting the formerly published lists of fossils, and thus presenting as complete a view as possible of the geology and palæontology of the superficial deposits of Canada. The second portion of the work (pp. 59-102) is occupied with a catalogue, often of a critical character, of the fossils of the Post-Pliocene deposits of Canada; and the third part (pp. 102-112) is largely concerned with the relations of the Post-Pliocene fossils to questions as to the derivation of species.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 95

Dawson, J. W. The Story of the Earth and Man. 8°. pp. 403. London, 1873.

A popular account of the succession of life upon the globe, chiefly based upon American data.

Dawson, J. W. On the footprints of *Limulus* as compared with the *Protichnites* of the Potsdam Sandstone. < *Canad. Nat.*, vol. vii, pp. 271-277, with 4 engravings. 1874.

Describes fully and figures the tracks and markings made by the recent *Limuli* in walking over the surface of the sand of the sea-shore, and the appearances produced by these Crustaceans burying themselves in the sand. The author concludes that *Protichnites* and *Olimnichnites* have been in all probability produced by large Crustaceans, most likely by *Trilobites*.

Dawson, J. W. Impressions and foot-prints of aquatic animals and imitative markings, on Carboniferous Rocks. < *Canad. Nat.*, new ser., vol. vii, pp. 65-74, with 5 figures. 1874.

Reprinted from the *Amer. Journ. Sci. and Arts*.

Dawson, J. W. Origin and history of life on our planet. An address before the American Association for the Advancement of Science, at Detroit, Michigan. pp. 26. Montreal, 1875.

In this address, the author deals with the bearings of Palæontology upon the questions connected with the origin and history of life upon the earth, and upon the doctrine of descent with modification.

Dawson, J. W. The Dawn of Life; being the history of the oldest-known fossil remains, and their relations to geological time and to the development of the animal kingdom. pp. 239, with 8 plates and 49 woodcuts. London, 1875.

This work deals principally with the history of the discovery of *Eozoön canadense*, and with all the known facts bearing on its structure and nature. The author first gives a descriptive sketch of the Laurentian formation, accompanied by sections, and a coloured map showing the distribution of the Laurentian Limestones in the counties of Ottawa and Argenteuil. Next, a history is given of the various steps which led to the discovery of *Eozoön*, and a record of its interpretation by Carpenter and the author. Thirdly, a chapter is devoted to a consideration of the minute structure exhibited by *Eozoön*; and this is compared with the structure of recent *Foraminifera*. The fifth chapter is concerned with the manner in which *Eozoön* has been preserved, and with a consideration of the processes of fossilisation by infiltration in general. In the sixth chapter, the author deals with the successors and contemporaries of *Eozoön*, with special reference to *Archæospherina*, *Stromatopora*, *Osanopora*, and *Receptaculites*. Another chapter is devoted to a consideration of the various objections which have been urged against the organic nature of *Eozoön*; and a final chapter treats of certain speculative considerations which may be drawn from the study of this fossil.

Dawson, J. W. Note on the phosphates of the Laurentian and Cambrian Rocks of Canada. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxxii, pp. 285-291. 1876.

Concludes that the phosphatic material found in these rocks in Canada is of organic origin, and has been produced by the agency of marine invertebrates.

Dawson, J. W. On Mr. Carter's objections to *Eozoön*. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xvii, pp. 118, 119. 1876.

Dawson, J. W. Notes on the occurrence of *Eozoön canadense* at Côte St. Pierre. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxxii, pp. 66-74, pl. x, with 4 woodcuts. 1876.

The author gives an account of the nature and arrangement of the strata at Côte St. Pierre, with special reference to the appearances presented by *Eozoön* as occurring

in situ. Numerous chrysotile veins pass through the limestone, but the author concludes that they are altogether subsequent to the fossil in origin. The close resemblance of weathered specimens to *Stromatopora* is insisted upon; and two new forms of *Eozoön canadense* are described as var. *minor* and var. *acervulina*. The limestone sometimes contains numerous little globose casts of chamberlets, single or attached in groups, each of which possesses the structure of the "proper wall" of *Eozoön*. For these, the author proposes the name of *Archæospherina*.

Dawson, J. W. *Eozoön canadense* according to Hahn. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xviii, pp. 29-38. 1877.

A critical notice of a memoir by Hahn (*see post.*), in which the latter endeavours to show that *Eozoön* is a purely mineral structure.

Dawson, J. W. Note on two Palæozoic Crustaceans from Nova Scotia. < *Geological Magazine*, Decade II, vol. iv, pp. 56-58, with 2 engravings. 1877.

Gives description and figures of *Anthrapalemon (Palæocarabus) hilliana* Dawson and *Homalonotus dawsoni* Hall.

De Cew, J. Notes on the Geology of the townships of Windham and Middleton, county of Norfolk, C. W. < *Canad. Journ.*, new ser., vol. vi, pp. 275-277. 1861.

Contains lists of fossils discovered in the Oriskany and Corniferous formations.

De La Beche, [Sir] H. T. Remarks on the Geology of Jamaica. < *Trans. Geol. Soc. Lond.*, ser. 2, vol. ii, pp. 143-194. 1829.

Contains a few notes on the fossils.

Desor, E. Synopsis des Échinides fossiles. Paris, 1853. pp. 490, with atlas of plates.

Describes various fossil Echinoids from the American province.

Desor, M. E., and Edward C. Cabot. On the Tertiary and more recent deposits in the Island of Nantucket. (In a letter to Sir Charles Lyell.) < *Quart. Journ. Geol. Soc. Lond.*, vol. v, pp. 340-344. 1849.

Contains lists of Post-Pliocene fossils (principally *Mollusca*) from Nantucket.

Devine, T. Description of a new Trilobite from the Quebec Group. < *Canad. Nat.*, vol. viii, pp. 95-98, figs. 1 and 2. 1863.

The species is described as *Olenus? logani*. Mr. Billings adds a note on its affinities.

Devine, T. Description of a new Trilobite from the Quebec Group. < *Canad. Nat.*, vol. viii, pp. 210, 211, with woodcut. 1863.

The species is described as *Menocephalus salteri*.

D'Orbigny, Alcide. Paléontologie de Cuba. In RAMON DE LA SAGRA's *Histoire Physique, Politique et Naturelle de l'Île de Cuba*. Paris, 1839.

[Describes the *Foraminifera* and *Mollusca*. Not seen by the writer.]

D'Orbigny, Alcide. Prodrome de Paléontologie stratigraphique universelle des Animaux Mollusques et Rayonnés. 3 vols. Paris, 1850-52.

Defines a few species of American fossils, and enumerates many others.

Duchassaing, P. Essai sur la constitution géologique de la partie basse de la Guadeloupe, dite la Grande-Terre. < *Bull. de la Soc. Géol. de France*, sér. 2, vol. iv, pp. 1093-1100. 1847.

This memoir is principally geological, but the author notes some of the fossils.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 97

Duchassaing, P. Observations sur les formations modernes de l'île de la Guadeloupe. < *Bull. de la Soc. Géol. de France*, sér. 2, vol. xii, pp. 753-759. 1855.

This memoir contains notes on the fossils, and is terminated by a table of the fossil and recent Echinoids of the Antilles and Gulf of Mexico.

Duchassaing, P., and J. Michelotti. Mémoire sur les Coralliaires des Antilles. < *Memorie della Reale Accad. delle Scienze di Torino*, ser. 2, vol. xix, pp. 279-363, with 10 plates. 1867.

This memoir treats principally of the recent Corals of the Antilles, but notices also some of the fossil forms from the same region.

Duchassaing, P., and J. Michelotti. Supplément au Mémoire sur les Coralliaires des Antilles. < *Memorie della Reale Accad. delle Scienze di Torino*, ser. 2, vol. xxiii, pp. 97-206, with 11 plates. 1871.

Like the preceding, this memoir is concerned principally with the recent Corals of the Antilles; but the authors also discuss some of the Tertiary forms.

Duncan, P. Martin. On the fossil Corals of [the West Indian Islands. Part I, < *Quart. Journ. Geol. Soc. Lond.*, vol. xix, pp. 406-456, pls. xiii-xvi; Part II, < *ibid.*, vol. xx, pp. 20-44, pls. ii-v; Part III, < *ibid.*, vol. xx, pp. 358-374; Part IV, < *ibid.*, vol. xxiv, pp. 9-33, pls. i and ii. 1863-68.

Enumerates and describes a large number of new and of previously recorded species of fossil Corals from the West Indies, principally from Antigua and San Domingo, but also from Jamaica, Barbadoes, Guadalupe, Trinidad, &c. The author also makes a number of general observations on the genera and species, and states his conclusions as to the age of the deposits in which these fossils occur.

In Part II, the author describes 23 species of fossil Corals from the Miocene formations of San Domingo, 15 species being new ones. The specimens were forwarded to the Geological Society by Mr. Lonsdale, along with a descriptive memoir written ten years before. *Antillia* and *Teleiophyllia* are founded by Dr. Duncan as new genera of *Astræida*.

In Part III, the author deals in an elaborate manner with the changes undergone by fossil Corals in general, and by those of the West Indies in particular, both prior to mineralisation and during the process of fossilisation.

In Part IV, Dr. Duncan treats principally of the fossil Corals of the Tertiary deposits of San Domingo, 6 species being described as new. Some further notes on the San Domingo Corals are added, 2 species being defined for the first time; and the Antiguan Corals, with 5 new species, are described. The new genera *Lamellastræa* and *Diplocania* are founded. The memoir concludes with a table of the synonyms and localities of the Cretaceous, Eocene, and Miocene Corals of the West Indies, and with a discussion as to the nature and alliances of the Coral-faunæ of this region.

Duncan, P. Martin. On the correlation of the Miocene beds of the West Indian Islands; and on the synchronism of the Chert-formation of Antigua with the lowest Limestone of Malta. < *Geological Magazine*, Decade I, vol. i, pp. 97-102. 1864.

From a study of the fossil Corals, the author concludes that the general correlation of the West Indian and European Mid-Tertiary strata can be asserted, and also that the Antiguan Chert-formation and the lowest of the Maltese Limestones are approximately contemporaneous.

Duncan, P. Martin. On the anatomy of the test of *Amphidetus* (*Echinocardium*) *virginianus*, Forbes, and on the genus *Breynia*. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxv, p. 16. 1865.

Treats of the *Amphidetus virginianus* of the Miocene Tertiary of Virginia, which the author believes to be specifically identical with a recent form.

Mis. Pub. No. 10—7

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Duncan, P. Martin, and G. P. Wall. A notice of the Geology of Jamaica, especially with reference to the District of Clarendon, with descriptions of the Cretaceous, Eocene, and Miocene Corals of the islands. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxi, pp. 1-15, pls. i, ii. 1865.

The palæontological portion of this memoir contains notices or descriptions of 27 species of Corals, of which 8 are described as new. The paper concludes with remarks on the affinities of the species, and on the correlation of the Cretaceous, Eocene, and Miocene strata of Jamaica with those of Europe.

Dybowski, W. N. Monographie der Zoantharia Sclerodermata aus der Silurformation Estlands, Nord Livlands, und der Insel Gotland, nebst einer Synopsis aller palæozoischen Gattungen dieser Abtheilung und einer Synonymik der dazu gehörigen bereits bekannten Arten. [Monograph of the Rugose Corals of the Silurian formation of Esthonia, Northern Livonia, and the Island of Gotland, together with a synopsis of all the Palæozoic genera of this group, and a synonymy of the hitherto recorded species.] 8°. pp. 276, with 5 plates. Dorpat, 1873 and 1874.

Defines several genera of North American Rugose Corals, and gives a synonymy of the recorded species in each genus.

Ehrenberg, Christian Gottfried. Ueber die mikroskopischen kiesel-schaligen Polycystinen als mächtige Gebirgsmasse von Barbados. [On the microscopic siliceous Polycystina as forming whole mountain-masses in Barbadoes.] < *Monatsbericht d. K. K. Akad. d. Wiss. Berlin*, 1847.

On the Polycystina of the Barbadoes earth.

Ehrenberg, Christian Gottfried. Mikrogeologie. Leipzig, 1854. pp. 374 and pp. 88, with 40 plates.

This work contains descriptions and figures of numerous American *Microzoa* and *Microphyta*. The second portion of the work is exclusively devoted to the description of the minute fossil organisms of this region.

Ehrenberg, Christian Gottfried. Erläuterungen über den Grünsand im Zeuglodon-Kalke Alabama's in Nord-Amerika. [Investigations into the Greensand of the Zeuglodon-Limestone of North America.] < *Monatsbericht d. K. K. Akad. d. Wiss. Berlin*, 1855, pp. 86-90.

The author shows that the grains of greensand interspersed in the Zeuglodon-limestone of Alabama are really of the nature of casts of the shells of Polythalamous *Foraminifera*. At least thirty different forms were recognized by the author.

Ehrenberg, Christian Gottfried. Die weitere Entwicklung der Kenntniss des Grünsandes als grüne Polythalamien-Steinkerne, über braun-rothe und corall-rothe Steinkerne der Polythalamien-Kreide in Nord-America, und über den Meeresgrund aus 12,900 Fuss Tiefe. [The further development of the discovery that the Greensand is composed of green casts of Polythalamia; also on the brownish-red or bright-red casts of Polythalamia in the Chalk of North America, and on the sea bottom at depths of 12,900 feet.] < *Monatsbericht d. K. K. Akad. d. Wiss. Berlin*, 1855, pp. 172-178.

The chief point in this paper is that the brown or reddish "chalk" of Alabama owes its colour to numerous shells of *Foraminifera* filled with a similarly coloured silicate of iron.

Ehrenberg, Christian Gottfried. Fortsetzung der mikrogeologischen Studien als Gesamt-Uebersicht der mikroskopischen Palæontologie

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 99

gleichartig analysirter Gebirgsarten der Erde, mit specieller Rücksicht auf dem Polycystinen-Mergel von Barbados. [Continuation of Microgeological studies, a general review of the microscopic Palaeontology of formations which have been similarly analysed, with special reference to the Polycystina Marls of Barbados.] < *Abhandl. d. K. Akad. d. Wiss.*, 1875, pp. 225, with 30 plates.

A considerable portion of this work is devoted to the consideration of the *Microzoa* of the "Barbadoes earth", a large number of new species being briefly described in the explanations which accompany the beautifully executed plates.

Emmerich, H. F. De Trilobitis dissertatio petrefactis. Berolini, 1839.

Describes some American Trilobites.

[**Etheridge, Robert.**] On the occurrence of animal fossils, with a list of genera. < *Appendix J* in "Report on the Geology of Trinidad", Part I of the West Indian Geological Survey, by P. Wall and J. G. Sawkins. pp. 161-166. 1860.

Contains lists of notes on the Post-Pliocene, Miocene, and Cretaceous fossils of Trinidad.

Etheridge, Robert. Notes on some rock-specimens from the Arctic-American Archipelago. In the "Whaling cruise to Baffin's Bay and the Gulf of Boothia, and an account of the rescue of the crew of the 'Polaris'", by Albert Hastings Markham, R. N. 8°. London, 1874.

Contains a list of rock-specimens, including some Upper Silurian fossils.

Etheridge, R., jun'r. On the relationship existing between the Echinothuridæ, Wyville Thomson, and the Perischoechinidæ, McCoy. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxx, pp. 307-315, pl. xxiv. 1874.

Defines the genera *Lepidechinus* Hall, *Melonites* D. D. Owen, and *Oligoporus* Meek and Worthen, and discusses their affinities.

Fischer, M. P. Sur quelques fossiles d'Alaska, rapportés par M. Pinart. [On some fossils from Alaska, collected by M. Pinart.] < *Comptes Rend.*, 1872, vol. lxxv, pp. 1784-1786.

The author describes the fossils collected by M. Pinart in a visit to Alaska. Amongst these is *Monotis salinaria*, indicating the occurrence of strata of Triassic age. From another locality are *Pholadomya* and *Aucella*, indicating deposits of Jurassic, or possibly Cretaceous, age. Lastly, in the Islands of Pribyloff is found a *Cardium* of Quaternary or Tertiary facies, of the group of *O. grænlanticum* Gmelin.

Fitton, W. K. Geological notice of the country passed over in Captain Back's Expedition. In "Narrative of the Arctic Land Expedition to the Mouth of the Great Fish River and along the Shores of the Arctic Ocean, in the years 1833, 1834, and 1835; by Captain Back". 1 vol. 8°. pp. 543-562. London, 1836.

Contains notes by Mr. Stokes on some fossils obtained from limestone at Lake Winnipeg.

Forbes, Edward. On the Fossil Shells collected by Mr. Lyell, from the Cretaceous Formations of New Jersey. < *Quart. Journ. Geol. Soc. Lond.*, vol. i, pp. 61-64, with 7 engravings. 1845.

This paper is an appendix to one by Sir Charles Lyell describing the Cretaceous strata of New Jersey, &c. (*Quart. Journ. Geol. Soc.*, vol. i, p. 55). The species of shells collected by Sir Charles amounted to 60 in number, and of these the following four are described as new:—*Ostrea subpatulata*, *Lima reticulata*, *Terebratula vanuzemiana*, and *Bulla morioni*. A note is added by Sir Charles Lyell on two *Foraminifera* from the same beds.

100 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

- [Forbes, Edward.] Description of some new Fossil Shells from Bissex Hill and Springfield in Barbados Communicated by Sir Robert H. Schomburgk, Ph. D., member of the Imperial Academy Nat. Curios., &c. < *Ann. and Mag. Nat. Hist.*, ser. 2, vol. i, pp. 347-349, with 5 woodcuts. 1848.

An excerpt from Sir Robert Schomburgk's "History of Barbados", comprising descriptions by Prof. E. Forbes and figures of *Scaloria ehrenbergi*, *Nucula packeri*, and *N. schomburgkii*.

- + Fromentel, E. D. Introduction à l'étude des Éponges Fossiles. [Introduction to the study of Fossil Sponges.] 4°. pp. 50, with 4 plates. Caen, 1859.

The only American form described in this work is *Palaeochonia* (*Palaeospongia*) *cyathiformis* (= *Porites cyathiformis* Hall) from the Trenton Limestone of the State of New York.

- Gabb, W. M. Notes on West Indian Fossils. < *Geological Magazine*, Decade II, vol. ii, pp. 544, 545. 1875.

The author notes that certain fossil shells which he had previously described had been redescribed by Mr. Guppy (*Geol. Mag.*, Decade II, vol. i, pp. 404-433). Count Pourtales also adds a list of the fossil corals collected by Mr. Gabb from the Cretaceous, Miocene, and Post-Pliocene deposits of San Domingo.

- + Geinitz, Hans Bruno. Die Graptolithen, ein monographischer Versuch zur Beurtheilung der Grauwackenformation in Sachsen und den angrenzenden Länder-Abtheilungen, sowie der silurischen Formation überhaupt. 4°. pp. 58, with 6 plates. Leipzig, 1852.

Though specially devoted to German *Graptolites*, some American forms are noticed. *Nemapodia* Emmons is referred to the *Graptolitida*, and the genus *Nereograptus* founded for the reception of this and of *Nereites*, *Nemerites*, and *Myrianites*. *Graptolithus gracilis* Hall and *G. (Dendrograptus) hallianus* Prout and *G. arundinaceus* Hall are referred to the Sertularians.

- Geinitz, Hans Bruno. Carbonformation und Dyas in Nebraska. < *Verhandl. der Kaiserlichen Leopoldino-Carolinischen Deutschen Akademie der Naturforscher*, Bd. xxxiii, pp. i-xii and 1-91, with 5 plates. 1867.

The palaeontological portion of this important memoir is occupied with the description of 97 species of invertebrate fossils from the Carboniferous and Permian Rocks of Nebraska. The paper concludes with a tabular list of the fossils collected by M. Marcou in these formations in Nebraska.

- Geinitz, Hans Bruno. Carbon-Formation und Dyas in Nebraska. < *Neues Jahrb. für Min., Geogn., Geol. und Petrefaktenkunde*, Jahrg. 1867, pp. 1-9.

A general review of the Carboniferous and Permian deposits of Nebraska, with notes on the fossils.

- Gesner, Abraham. Remarks on the Geology and Mineralogy of Nova Scotia. Halifax, 1836. pp. 265.

Contains notes on the fossils.

- + Gesner, Abraham. First report on the Geological Survey of the Province of New Brunswick, St. John's, 1839, pp. 87. Second report on the same, 1840, pp. 76. Third report on the same, 1841, pp. 88. Fourth report on the same, 1842, pp. 101.

These reports are primarily concerned with the geological structure of the province of New Brunswick; but they also contain scattered notices of the fossils met with.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 101

Gibson, John. Geological features of Huron County, Ontario. < *Canad. Nat.*, new ser., vol. vii, pp. 34-40. 1874.

Contains notes on the fossils.

Goldfuss, August. Petrefacta Germaniæ. 1826.

Describes some North American fossils (e. g. *Favosites favosa*, *Columnaria alveolata*, &c.).

Grewingk, C. Die an der Westküste Nord-Amerikas und auf den aleutischen Inseln bisher gefundenen fossilen Thier- und Pflanzen-Reste. [The hitherto discovered animal and vegetable fossils of the west coast of North America and the Aleutian Islands.] < *Verhandl. der Russ. Kaiserlichen Gesellschaft, St. Petersburg, Jahrgang 1848-49*, Petersb., 1850, pp. 343-366, with 3 plates.

Contains a complete list of the organic remains known at the above date as occurring in Northwestern America and in the Aleutian Islands. The fossils are from the Carboniferous, Jurassic, Tertiary, and Post-Tertiary.

Grewingk, C. Beitrag zur Kenntniss der orographischen und geognostischen Beschaffenheit der Nordwestküste Americas, mit den anliegenden Inseln. [On the orography and geognosy of the northwest coast of North America, and the outlying islands.] 8°. pp. 351. St. Petersburg, 1850. With 4 plates of fossils.

Notifies and describes collections of fossils made by M. Ilia Wosnesensky in the extreme northwestern regions of North America. The fossils are principally Tertiary and Post-Tertiary.

Gümbel, C. W. Beiträge zur Kenntniss der Organisation und systematischen Stellung von *Receptaculites*. < *Abhandl. math.-phys. Classe K. Bay. Akad. d. Wiss.*, ii, Bd. xii, Abth. i, pp. 170-215, pl. A. 1876.

Deals with the organisation and systematic position of *Receptaculites*, with various references to the structure of American specimens and the views of American palæontologists on this subject.

Guppy, R. J. Lechmere. On the older Parian Formation in Trinidad. < *The Geologist*, vol. vii, pp. 204-207. 1863.

Contains notes on the fossils.

Guppy, R. J. Lechmere. The Older Parian in Trinidad. < *Geologist*, vol. vii, pp. 363, 364. 1863.

A letter on the age of the Older Parian Formation, as determined by its fossils.

Guppy, R. J. Lechmere. On the occurrence of Foraminifera in the Tertiary beds of San Fernando, Trinidad. < *Trans. Sci. Assoc. Trinidad*, 1863, p. 11. [*Geologist*, 1864, p. 159.]

Guppy, R. J. Lechmere. On some deposits of late Tertiary age at Matura, on the east coast of Trinidad. < *Trans. Sci. Assoc. of Trinidad*, 1864, p. 33. [*Geological Magazine*, Decade I, vol. ii, pp. 256-261. 1865.]

The author enumerates more than ninety species of fossils from this deposit, mostly *Mollusca*, and makes remarks on their characters.

Guppy, R. J. Lechmere. On the Tertiary Mollusca of Jamaica. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxii, pp. 281-294, pls. xvi-xviii. 1866.

After discussing the relationships of the Miocene deposits of Jamaica, the author gives a list of 61 species of Lamellibranchs and Gasteropods therefrom. Of these, 27 species are new, and are fully described and figured; references, with descriptive remarks, and in some cases figures, being made to the others.

102 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Guppy, R. J. Lechmere. On Tertiary Brachiopoda from Trinidad. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxii, pp. 295-297, pl. xix, figs. 1-3. 1866.

Describes and figures *Terebratula trinitatensis*, *T. carneoides*, and *T. lecta* as new species. In a note subjoined to the paper, Mr. Davidson draws attention to the resemblance of *T. carneoides* Guppy to *T. carnea* of the Cretaceous on the one hand and the living *T. vitrea* on the other hand.

Guppy, R. J. Lechmere. On Tertiary Echinoderms from the West Indies. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxii, pp. 297-301, pl. xix, figs. 4-8. 1866.

Notes nine species of Echinoids, of which *Echinolampas semiorbis*, *E. lycopersicus*, and *E. ovum-serpentis* are described as new.

Guppy, R. J. Lechmere. On the relations of the Tertiary formations of the West Indies, with a note on a new species of *Ranina*, by Henry Woodward, Esq., F. G. S.; and on the Orbitoides and Nummulinae, by Prof. T. Rupert Jones, F. G. S. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxii, pp. 570-593, pl. xxvi. 1866.

In the first portion of this memoir, the author gives a general review of our knowledge of the Tertiary formations of the West Indies. In a second section, the author describes 18 new species of fossils, of which 16 are Mollusca, one is a *Spirorbis*, and another is doubtfully referred to the Sponges under the name of *Cisseis* (gen. nov.) *asteriscus*. The paper concludes with observations on the relations of the fauna of the Caribbean Miocene, and a table showing the affinities of some of the fossils from this formation. In an appended note, Mr. Henry Woodward gives the name of *Ranina porifera* to a new Crustacean from the Tertiary of Trinidad; and in a second note, Prof. Rupert Jones discusses the Orbitoides and Nummulinae of the Tertiary Asphaltic Bed of Trinidad.

Guppy, R. J. Lechmere. Notes on West Indian Geology, with remarks on the existence of an Atlantis in the early Tertiary period; and descriptions of some new fossils from the Caribbean Miocene. < *Geological Magazine*, Decade I, vol. iv, pp. 496-501, with 1 engraving. 1867.

The new species described are *Leda incognita*, *L. bisulcata*, *Tornatina coix-lacryma*, *Stomatia eidolon*, *Nucula schomburgki*, and *Mastra subovalina*. The new genus *Crepidacella* is proposed for *C. cepula* Guppy, a Buccinoid shell from the Miocene Tertiary.

Guppy, R. J. Lechmere. On the Tertiary fossils of the West-Indies, with especial reference to the classification of the Kainozoic Rocks of Trinidad. < *Proc. Sci. Assoc. of Trinidad*, 1867, pp. 145-176.

After a general introduction, the author discusses the Atlantis theory, and the classification of the Tertiary deposits of Trinidad. A list of the fossil Mollusca, Echinoderms, Articulates, and Protozoa recorded up to this date from the Tertiary rocks of the Caribbean area (excluding Post-Pliocene forms) is next given. Lastly, the author describes a number of new species of Mollusca and two new forms of *Pentacrinus*.

Guppy, R. J. Lechmere. Notes on a visit to Dominica. < *Proc. Sci. Assoc. of Trinidad*, 1869, pp. 379-392. [See also *Geol. Magazine*, Decade I, vol. ix, pp. 75, 76.]

Contains notes on the geology of Dominica, with lists of Mollusca and Corals from the Pliocene formation of this island.

Guppy, R. J. Lechmere. On Foraminifera from the Tertiaries of San Fernando, Trinidad. < *Proc. Sci. Assoc. Trinidad*, 1872, pp. 13-16. [See also *Geol. Magazine*, Decade I, vol. x, pp. 362, 363.]

Records the discovery of Foraminifera in the Lower Miocene beds of San Fernando, Trinidad, and gives a list of the recognized species, 18 in number.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 103

Guppy, R. J. Lechmere. On some new Tertiary fossils from Jamaica. < *Proc. Sci. Assoc. of Trinidad*, 1873, pp. 72-88, pls. i-iii.

Describes a large number of new species of fossils from the Miocene formation of Jamaica, whilst previously recorded forms are enumerated or briefly alluded to. The new forms described and figured are all *Mollusca*, with the exception of *Ditrupea dentalina*.

Guppy, R. J. Lechmere. On the West Indian Tertiary Fossils. < *Geological Magazine*, Decade II, vol. i, pp. 404-412, 433-446, pls. xvi-xviii. 1874.

The author describes and figures a number of *Mollusca* from the Eocene, Miocene, and Pliocene deposits of the West Indies, including 17 new species. The paper concludes with a list of the *Mollusca*, *Articulata*, *Echinodermata*, and *Protozoa* found in the above-mentioned deposits.

Guppy, R. J. Lechmere. Supplement to the paper on West Indian Tertiary Fossils. < *Geological Magazine*, Decade II, vol. ii, pp. 41, 42. 1875.

This is a supplement to the preceding paper, in which the author describes as new *Leda clava* and *Ditrupea dentalinum*, and proposes the name of *Crassinella* for that of *Gouldia*, pre-occupied for a genus of birds.

Guppy, R. J. Lechmere. On the Miocene fossils of Haiti. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxxii, pp. 516-532, pls. xxviii, xxix. 1876.

A critical memoir, dealing principally with a communication by Prof. Gabb on "The Topography and Geology of San Domingo". Remarks are made upon the characters of 122 species, all but one belonging to the *Mollusca*. Twenty-one species are figured, of which 6 are new.

Guppy, R. J. Lechmere. On the physical geography and fossils of the older rocks of Trinidad. < *Proc. Sci. Assoc. of Trinidad*, 1877.

In the palæontological portion of this paper, the author records *Eozoön* (?) *caribbaum*, *Favosites fenestralis*, and species of *Pseudocrinites* and *Petraia* from the "Caribbean" series, and of undetermined species of *Murchisonia* and *Lozonema* (?) from the "Blue Limestone" series.

Guppy, R. J. Lechmere. On the discovery of organic remains in the Caribbean series of Trinidad. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxvi, pp. 413, 414. [Abstract.]

The author described the so-called "Caribbean series" of Trinidad, which he suggested would ultimately prove to be pre-Silurian. The organic remains which he had detected consisted of fragments of corals, plants, and stems of Echinoderms, and a peculiar structure which the author regarded as most nearly related to *Eozoön*, and for which he proposed the name of *Eozoön caribbaum*.

Hahn, Otto. Is there such a thing as *Eozoön canadense*? A microgeological investigation. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xvii, pp. 265-282. (Translated from the *Württembergische naturwissenschaftliche Jahreshefte*, 1876.)

After an examination of serpentinous limestones from Canada and Europe, the author concludes that *Eozoön canadense* is of inorganic origin.

Hall, James. On the supposed impression in Shale of the soft parts of an *Orthoceras*. (Communicated by Sir Roderick I. Murchison.) < *Quart. Journ. Geol. Soc. Lond.*, vol. v, pp. 108-111, with woodcut. 1849.

Gives reasons for concluding that the specimens of *Orthoceras* previously described by Mr. J. G. Anthony, from the Cincinnati formation, as exhibiting indications of the soft parts of the animal, are really due to concretionary action.

104 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Hall, James. On the genus *Tellinomya* and allied genera. < *Canad. Nat.*, vol. i, pp. 390-395, with 7 woodcuts. 1856.

Fully characterises *Tellinomya*, and discusses the characters of *Nuculites* Conr., *Cuculella* McCoy, and *Lyrodesma* Conr.

Hall, James. Descriptions of Canadian Graptolites. < *Geological Survey of Canada: Report of Progress for the year 1857*. Toronto, 1858. pp. 109-145.

In this report, the author describes the *Graptolites* found in the "Quebec Formation" at Point Levis; a fuller description, accompanied by engravings, being subsequently given in Decade II of the publications of the Canadian Survey. Twenty-one new species of the genus "*Graptolithus*" are described and 4 new species of the new genus *Phyllograptus*.

Hall, James. Note upon the genus *Graptolithus* and description of some remarkable new forms from the shales of the Hudson River Group, discovered in the investigations of the Geological Survey of Canada, under the direction of Sir W. E. Logan, F. R. S. < *Canad. Nat.*, vol. iii, pp. 139-150 and 161-177, pls. i and ii. 1858.

Descriptions of *Graptolites* from the Quebec Group, from the "Report of Progress of the Canadian Geological Survey" for 1857.

Hall, James. Descriptions of new species of fossils from the Silurian Rocks of Nova Scotia. < *Canad. Nat.*, vol. v, pp. 144-159, with 20 engravings. 1860.

Describes 8 new species of Brachiopods, 15 new species of Lamellibranchs, 2 of Gastropods, 1 new form of Orthoceras, 2 of Trilobites, and 3 of Ostracoda. Several forms are described as new varieties, and some previously known species are also noticed. All the species are from the "Arisaig Series".

Hall, James. On a new Crustacean from the Potsdam Sandstone. A letter addressed to Principal Dawson, dated Albany, 31st October, 1862. < *Canad. Nat.*, vol. vii, pp. 443-445, with an engraving. 1862.

Describes and figures from the Potsdam Sandstone of Wisconsin a singular Crustacean (*Aglaspis*), which appears to have possessed a caudal spine, and to have otherwise resembled the recent *Limulus*. The author suggests that it may have been this animal which produced the tracks of *Protichnites* in the Potsdam Sandstone of Canada.

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Hall, James. Graptolites of the Quebec Group. < *Figures and Descriptions of Canadian Organic Remains*, Decade II, pp. 151, pls. i-xxiii, with 35 woodcuts. Montreal, 1865.

The first portion of this work (pp. 5-64) is of the nature of a general introduction, dealing with the nature, form, and structure of *Graptolites*, their mode of reproduction and development, their classification, geological and geographical range in America, bibliography, &c. The second section of the report is occupied with descriptions of the species which have been found in the Quebec rocks at Point Levis. Altogether, 52 species are described and figured, under the genera *Graptolithus*, *Diplograptus*, *Climacograptus*, *Retiolites*, *Retiograptus*, *Phyllograptus*, *Dendrograptus*, *Oallograptus*, *Dictyonema*, *Ptilograptus*, and *Thamnograptus*. Descriptions of most of the species had been previously published in the "Report of Progress of the Geological Survey of Canada" for 1857, but without illustrations. In the concluding portion of his work, the author describes two species of *Graptolites* from the Utica Slates of the United States, introduced for comparison and illustration.

Hall, James. On the occurrence of an internal convoluted plate within the body of certain species of Crinoidea. < *Ann. and Mag. Nat. Hist.*, ser. 3, vol. xvii, pp. 398, 399. 1866.

A note reprinted from the Proc. Bost. Soc. Nat. Hist., x, 33.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 105

Hartt, C. Frederick. On a subdivision of the Acadian Carboniferous Limestones, with a description of a section across these rocks at Windsor, N. S. < *Canad. Nat.*, new ser., vol. iii, pp. 212-224. 1868.

Contains numerous descriptive notes on the fossils.

[**Hartt, C. Frederick.**] Palæontological appendices (A and B) in "Observations on the Geology of Southern New Brunswick", by L. W. Bailey. Fredericton, 1865. pp. 131. X

The palæontological appendices to the above-mentioned work deal with the fossils of New Brunswick, from the Post-Pliocene to the Primordial. Mr. Scudder also gives a letter relating to the insect-remains found in the Devonian.

[**Haughton, Samuel.**] Geological notes and illustrations, in "Reminiscences of Arctic ice-travel in search of Sir John Franklin and his companions", by Captain F. L. McClintock, R. N. < *Journ. Roy. Dublin Soc.*, vol. i, pp. 183-250, pls. v-xi, and vol. iii, pp. 53-58. 1857. f

In the palæontological portion of this memoir, Professor Haughton describes numerous Palæozoic fossils, the new species being *Orthoceras griffithi*, *Loxonema mcclintocki*, *L. rossi*, *Cromus arcticus*, *Cardiola salteri*, *Spirifer arcticus*, *Monotis septentrionalis*, and *Obolites arcticus*.

Haughton, Samuel. Geological account of the Arctic Archipelago, drawn up principally from the specimens collected by Captain F. L. McClintock, R. N., from 1849 to 1859. Appendix to "The Voyage of the 'Fox' in the Arctic Seas", by Capt. F. L. McClintock. London, 1859. pp. 322-399. [Reprinted in *Journ. Geol. Soc. Dublin*, vol. vii, pp. 196-213.] f

This memoir contains lists of the fossils collected from the Silurian, Carboniferous, Jurassic, and Post-Pliocene deposits of the Arctic regions. *Ammonites mcclintocki* is defined as a new species.

Hébert, E. Documents sur la Géologie du bassin du Mackenzie, recueillis par le Père Petitot. < *Bull. de la Soc. Géol. de France*, 3e sér., t. iii, pp. 87-93. 1877.

Gives a list of nine species of Devonian fossils collected by Père Petitot in the basin of the Mackenzie River, and identified by MM. Hébert and Munier-Chalmas.

Hector, James. On the geology of the country between Lake Superior and the Pacific Ocean (between the 48th and 54th parallels of latitude), visited by the government exploring expedition under Captain J. Palliser (1857-60). < *Quart. Journ. Geol. Soc. Lond.*, vol. xvi, pp. 388-445. 1866. f X?

This memoir is a geological one; but the author gives short lists of the fossils obtained from the Cretaceous rocks, and from the Palæozoic deposits which he had examined in the region in question.

Heer, Oswald. Flora fossilis Arctica. 1868-71.

In vol. i, pp. 129, 130, the author describes some remains of insects from the Miocene of Greenland.

Heer, Oswald. Flora fossilis Alaskana. [The fossil flora of Alaska.] < *Kong. Svenska Vetenskaps-Akad. Handlingar*, new series, vol. viii, Stockholm, 1869. X

Though especially devoted to fossil botany, a few fossil insects are described by the author (p. 39); and M. Charles Mayer, of Zurich, gives a description of the *Mollusca* of the plant-beds (pp. 40, 41, pl. x, figs. 7-13).

106 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

+ **Heer, Oswald.** Contributions to the Fossil Flora of North Greenland, being a description of the plants collected by Mr. Edmund Whympere during the summer of 1867. < *Phil. Trans.*, 1869, pp. 445-488.

At pp. 484, 485, the author describes two new insects (*Cistalites punctulatus* and *Cerco-
pidium rugulosum*) and an undetermined species of *Ocyas*, from deposits of Miocene age.

X **Heer, Oswald.** Die Kreideflora der arctischen Zone, gegründet auf die von den schwedischen Expeditionen von 1870 und 1872 in Grönland und Spitzbergen gesammelten Pflanzen. < *Kong. Svenska Vetenskaps-Akad. Handlingar*, new ser., vol. xii, Stockholm, 1874.

This memoir is botanical, but the author describes, under the name of *Iulopsis cretaceus*, a fossil Myriapod from Atanekrdluk in Greenland (p. 120, pl. xxxiii, fig. 7), and also two Rhynchophorous insects (pp. 91, 92).

+ **Heer, Oswald.** Nachträge zur miocenen Flora Grönlands, enthaltend die von der schwedischen Expedition im Sommer 1870 gesammelten miocenen Pflanzen. < *Kong. Svenska Vetenskaps-Akad. Handlingar*, vol. xiii, Stockholm, 1874.

In addition to the plant-remains, the author describes two species of *Coleoptera* (p. 25, pl. v, figs. 12 and 13).

Helland, —. Om de is fyldte Fjorde. < *Nyt-Tidsskrift for Mathematik og Naturkundskab, Christiania*, 1875.

Contains lists of shells by Sars.

Heneken, T. S. On some Tertiary deposits in San Domingo, with notes on the Fossil Shells, by J. C. Moore, Esq., F. G. S., and on the Fossil Corals, by W. Lonsdale, Esq., F. G. S. < *Quart. Journ. Geol. Soc. Lond.*, vol. ix, pp. 115-134. 1853.

The note by Mr. Moore supplies lists of and remarks on the fossil *Mollusca* collected by Colonel Heneken in San Domingo, and Mr. Lonsdale performs a corresponding service as regards the Corals.

Hind, Henry Youle. The North-west Territory: reports of progress, together with a general report of the Assiniboine and Saskatchewan Exploring Expedition. 4°. Toronto, 1859.

[Not seen by the writer.]

+ **Hind, Henry Youle.** Narrative of the Canadian Red River Exploring Expedition of 1857, and of the Assiniboine and Saskatchewan Exploring Expedition of 1858. 2 vols. 8°. London, 1860.

In vol. ii, pp. 239-350, the author gives an account of the geology of the district explored by him, along with notes and descriptions of the fossils met with. From rocks of Silurian age, *Modiolopsis parviuscula* and *Orthoceras simpsoni* are described as new. *Lucina occidentalis* from the Devonian and *Ammonites barnstoni* and *A. billingsi* from Jurassic strata are also described as new, the two latter being determined by Mr. Meek. From the Cretaceous formation a number of fossils are recognized; *Anomia flemingi*, *Inoceramus canadensis*, and *Leda hindi* being determined as new. No Tertiary fossils were obtained.

Hinde, George Jennings. Description of a new genus of Tabulate Coral. < *Proc. Geol. Soc. Lond.*, vol. xxxi, p. lxxxvii. 1875.

Gives the name of *Spherolites* to a massive free corallum belonging to the *Favositida*, resembling *Obolites* in general character, but having perforated walls and incomplete tabulae. The single species *S. nicholsoni* is described from the Lower Helderberg formation (Ludlow) of New Brunswick.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 107

Hinde, George Jennings. The Glacial and Interglacial strata of Scarborough' Heights and other localities near Toronto, Ontario. < *Canad. Journ.*, new ser., vol. xvi, with map. 1878.

The author records the discovery of fresh-water and land shells (*Planorbis* and *Zonites*) in stratified sands and clays of Interglacial date, underlaid and overlaid by true "till", at Scarborough' Heights, near Toronto. These remains are accompanied by numerous fragments of plants.

Honeyman, D. On new localities of Fossiliferous Silurian Rocks in Eastern Nova Scotia. < *Canad. Nat.*, vol. v, pp. 293-299, with 1 engraving. [With a note by Principal Dawson on the fossils.] 1860.

Dr. Honeyman's paper is chiefly geological, though the fossils are incidentally noticed. In an appended note, Dr. Dawson discusses several of the fossils, figuring the head of *Homalonotus dawsoni* Hall, and describing *Orthoceras ezornatum* as a new species.

Honeyman, D. On the Geology of Arisaig, Nova Scotia. < *Quart. Journ. Geol. Soc. Lond.*, vol. xx, pp. 333-345. 1864.

A geological paper, but contains lists of the fossils, all belonging to the Silurian series, and corresponding with the Lower Helderberg and Clinton of the State of New York.

Honeyman, D. Notes on the Geology of Arisaig, Nova Scotia; with a note by Prof. T. Rupert Jones, F. G. S. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxvi, pp. 490-492. 1870.

This paper is geological, but the note added by Prof. Rupert Jones deals with the *En-tomostraca*, four species of which, of Upper Silurian type, are noted.

Honeyman, D. Geology of Antigonish County, N. S. < *Trans. Nova Scotia Inst. Nat. Sci.*, vol. i, part i, pp. 106-120. 1863.

The author notes the fossils collected in the region in question.

How, —. Notice of the occurrence of a Trilobite in the Lower Carboniferous Limestone of Hants Co. < *Trans. Nova Scotia Inst. Nat. Sci.*, vol. i, part i, pp. 87, 88. *yr. ?*

The author notices the occurrence of a species of *Phillipsia*. ?

[**Howley, James P.**] Geological survey of Newfoundland. < *Report of Progress for the year 1874*, pp. 27-74. St. John's, 1875. X

Contains notes on the fossils.

Hunt, T. Sterry. Report for the year 1857. < *Geological Survey of Canada: Report of Progress for the year 1857*, pp. 193-217. Toronto, 1858. A 6

The first part of this report deals with the structure, composition, and mode of origin of dolomites and magnesian limestones, and contains many observations and theories of great interest to the palaeontologist.

Hunt, T. Sterry. On the mineralogy of certain organic remains from the Laurentian Rocks of Canada. < *Quart. Journ. Geol. Soc.*, vol. xxi, pp. 67-71. 1865.

Gives a detailed account, accompanied with analyses, of the mineral nature and structure of *Eozoön canadense*.

Hunt, T. Sterry. Geology and mineralogy of the Laurentian Limestones. < *Geological Survey of Canada: Report of Progress from 1863 to 1866*, pp. 181-233. Ottawa, 1866. X a

Though essentially mineralogical, this report contains many interesting observations bearing on the nature and mode of preservation of *Eozoön canadense*.

108 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Hunt, T Sterry. Notes on the silicification of fossils. < *Canad. Nat.*, new ser., vol. i, pp. 46-50. 1866.

Isbister, A K. On the geology of the Hudson's Bay territories and of portions of the Arctic and North-western regions of America; with a coloured geological map. < *Quart. Journ. Geol. Soc.*, vol. xi, pp. 497-520. 1855.

This memoir is essentially geological, but contains general notices of the fossils of the districts treated of. The fossils of the Carboniferous formation, of the Jurassic strata, of the Tertiary and Post-Tertiary deposits, and of the Miocene beds of Oregon Territory, are specially alluded to.

Jackson, C. J. Sur un moule du *Paradoxides harlani*. < *Comptes Rendus*, vol. xlv, pp. 254, 255. 1858.

Announces the discovery of a cast of *Paradoxides harlani* at Braintree, sent to M. Élie de Beaumont.

Jackson, C. J. Sur l'identité du *Paradoxides harlani* et du *Paradoxides terra-novæ*. < *Comptes Rendus*, vol. xlvii, p. 859. 1859.

Jameson, Robert. Notes on the geology of the countries discovered during Captain Parry's second expedition, A. D. 1821-22-23. In "Journal of a Third Voyage for the Discovery of a North West Passage from the Atlantic to the Pacific; performed in the years 1824-25, in His Majesty's ships Hecla and Fury, under the orders of Captain William Edward Parry". Appendix, pp. 132-151. London, 1826.

Contains various notes on the fossils observed during the expedition. Mr. Stokes communicates a note on a fossil from limestone of the island of Igloodik, which is clearly a species of *Receptaculites*.

Jameson, Robert. Arctic geology. In "Discovery and Adventure in the Polar Seas and Regions". 1 vol. 12°. < *Edinburgh Cabinet Library*. 1830.

The chapter on Arctic geology contains notices of the fossils discovered in the Arctic regions.

Jeffreys, J. Gwyn. The Post-Tertiary fossils procured in the late Arctic Expedition; with notes on some of the recent and living Mollusca from the same expedition. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xx, pp. 229-242. 1877.

The fossils described in this communication were collected by the naturalists of the Arctic Expedition of 1875-1876 in Post-Tertiary sands and clays at heights of from 10 to 600 feet above the present sea-level. Eighteen species of Mollusca, one Coelenterate (*Penatula*), and one Foraminifer are noted, all now living.

Jones, T. Rupert. Notes on Palæozoic Bivalved Entomostraca. No. II. Some British and foreign species of *Beyrichia*. < *Ann. and Mag. Nat. Hist.*, ser. 2, vol. xvi, pp. 163-176, pl. vi. 1855.

The only American species described is *Beyrichia lata* Vanuxem (*Agnostus latus* Van.).

Jones, T. Rupert. Notes on the Palæozoic Bivalved Entomostraca. No. III. Some species of *Leperditia*. < *Ann. and Mag. Nat. Hist.*, ser. 2, vol. xvii, pp. 81-99, pls. vi and vii. 1856.

Amongst the American species described are *Leperditia arctica* Jones (Arctic regions, Upper Silurian), *L. alta* Conrad, and *L. gibbera*, n. sp., Upper Silurian, Beechey Island.

Jones, T. Rupert. Notes on the Beyrichia and Leperditia
< *Ann. & Mag. Nat. Hist.* April 1857.
also Rogers Geology of Pa., Vol II p. 534.

- Jones, T. Rupert.** On the Palæozoic Bivalve Entomostraca of Canada. *< Figures and Descriptions of Canadian Organic Remains, Decade III, Montreal, 1853. pp. 91-101, pl. xi.* X 60

Nine species of *Ostracoda* are described in this memoir. Five new varieties of *Leperditia canadensis* are defined, and *Isoschilina* (with two species) is proposed as a subgenus of *Leperditia*.

- Jones, T. Rupert.** Notes on the Palæozoic Bivalved Entomostraca. No. IV. Some North American species. *< Ann. and Mag. Nat. Hist., ser. 3, vol. i, pp. 241-257, pls. ix, x. 1858.*

The new species described are *Beyrichia rugulifera*, *B. sigillata*, *B. clathrata*, and *B. plagosa* (from Beechey's Island); *B. logani* and *Leperditia canadensis* from the Calciferous, and the latter from the Trenton also; *L. anna* and *L. (Isoschilina) ottawa* (Calciferous); *L. (Isoschilina) gracilis*, *Ocytheropsis concinna*, *O. siliqua*, and *O. rugosa* (Trenton); *Leperditia pennsylvanica* (Clinton); *L. ovata* (Trenton); and *Beyrichia pennsylvanica* (Onondaga Salt Group). There are also notes on several previously described forms, and a table of the genera and species of *Ostracoda* known at this date as occurring in Arctic America, Canada, and the United States.

- Jones, T. Rupert.** On some additional Palæozoic Bivalved Entomostraca. from Canada. *< Ann. and Mag. Nat. Hist., ser. 3, vol. i, pp. 340-342. 1858.*

Occupied chiefly with giving new localities and horizons for previously described forms.

- Jones, T. Rupert.** A monograph of the fossil *Estheriæ*. 4°. pp. 134, with 5 plates. *< Palæontographical Society. 1862.* X

Describes *Estheria ovata* from specimens collected in Pennsylvania, Virginia, and North Carolina (pp. 84-99, pl. ii, figs. 26-38). Also describes and figures *Leaia leidyi* from specimens obtained from the Lower Carboniferous Sandstones of Pennsylvania. Lastly, the author describes and figures two *Ostracodes* from the Trias of North America as new species, under the names *Candona ? rogersii* and *C. ? emmonsii*.

- Jones, T. Rupert.** On fossil *Estheriæ* and their distribution. *< Quart. Journ. Geol. Soc. Lond., vol. xix, pp. 140-157. 1863.*

Refers especially to *Estheria ovata* Lea, from North and South Carolina, Virginia, and Pennsylvania, noticing in particular the geological horizon at which they occur.

- Jones, T. Rupert.** The relationship of certain West-Indian and Maltese strata, as shewn by some *Orbitoides* and other Foraminifera. *< Geological Magazine, Decade I, vol. i, pp. 102-106. 1864.*

The author remarks on some examples of *Orbitoides* from Antigua and Jamaica, and on some *Nummulina* from the former island, and shows that there is thus established a strong relationship between the Mid-Tertiary fauna of Malta and that of the West-Indies.

- Jones, T. Rupert.** On the oldest-known fossil, *Eozoön canadense* of the Laurentian Rocks of Canada; its place, structure, and significance. *< Popular Science Review, 1867, pp. 343-352, with plate xv and 2 woodcuts.* X

A semi-popular account of *Eozoön canadense*.

- Jones, T. Rupert.** Manual of the Natural History, Geology, and Physics of Greenland and the neighbouring regions; prepared for the use of the Arctic Expedition of 1875, under the direction of the Arctic Committee of the Royal Society. 8°. pp. 783. London, 1875. X

The portion of this work relating to geology (pp. 531-553) contains a summary of all that is known on Arctic geology, with reprints or abstracts of papers on this subject by different authors, and lists of fossils.

110 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Jones, T. Rupert, and H. B. Holl. Notes on the Palæozoic Bivalved Entomostraca. No. VI. Some Silurian species (*Primitia*). < *Ann. and Mag. Nat. Hist.*, ser. 3, vol. xvi, pp. 414-425, pl. xiii. 1865.

Amongst the American forms noticed are *Beyrichia logani* Jones and *Cytheropsis concinna* Jones, both of which are removed to *Primitia*.

Jones, T. Rupert, and H. B. Holl. Notes on the Palæozoic Bivalved Entomostraca. No. VIII. Some Lower Silurian species from the Chair of Kildare, Ireland. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. ii, pp. 54-62, pl. vii. 1868.

In a note (p. 55), the authors point out that *Cytheropsis rugosa* Jones, from the Trenton Limestone of Canada, is a *Primitia* (see *Ann. and Mag. Nat. Hist.*, ser. 3, vol. i, p. 249, pl. x, fig. 5) figured upside down.

Jones, T. Rupert, and H. B. Holl. Notes on the Palæozoic Bivalved Entomostraca. No. IX. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. iii, pp. 211-223, pls. xiv and xv. 1869.

A paper descriptive of European species. At the end, however, the authors give a list of the known Silurian *Primitia*, noting various species from North America.

Jones, T. Rupert, and W. Kitchen Parker. On the Foraminifera of the family Rotalinæ (Carpenter) found in the Cretaceous formations; with notes on their Tertiary and recent representatives. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxviii, pp. 103-130. 1872.

The American forms treated of in this communication are the Cretaceous Rotalines described by Ehrenberg, from the Missouri and Mississippi (*Mikrogeologie*), and those described by Reuss from the Greensand of New Jersey (see REUSS).

Kalm, Peter. Travels. 1750.

[Not seen by the writer.] Describes various fossils which he saw in limestone at Fort St. Frederick, or Crown Point, on Lake Champlain.

Kent, W. Saville. On an existing Coral closely allied to the Palæozoic genus *Favosites*; with remarks on the affinities of the *Tabulata*. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. vi, pp. 384-387, pls. xvii, xviii. 1870.

Founds the genus *Favositipora* for a recent Coral related to *Alveopora*; and describes a fossil form of the same, believed to be from the Devonian of North America, under the name of *Favositipora paleozoica*.

King, W., and T. H. Rowney. On the so-called Eozoönal Rock. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxii, pp. 185-218, pls. xiv and xv. 1866.

The authors describe in this memoir the results of a careful chemical and microscopical examination of the Grenville "Eozoönal" Ophite, from which they arrive at the conclusion that *Eozoön canadense* is truly of inorganic origin.

King, W., and T. H. Rowney. On the so-called "Eozoönal" Rock. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxv, pp. 116, 117. [Abstract.] 1869.

The authors adduce further evidence that their views as to the mineral nature of *Eozoön* are correct.

King, W., and T. H. Rowney. On the mineral origin of the so-called "Eozoön canadense". < *Proc. Roy. Irish Acad.*, ser. 2, vol. i, pp. 140-153. 1871.

A reply to papers by Drs. J. W. Dawson and T. Sterry Hunt on the zoological and chemical aspects of the question respectively. The paper concludes with a recapitulation of the various points detailed in the formerly published papers of the authors.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 111

King, W., and T. H. Rowney. Eozoön, examined principally from a Foraminiferal standpoint. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiv, pp. 274-289, pl. xix. 1874.

A controversial paper, in which evidence is brought forward to show that *Eozoön canadense* is inorganic in its nature.

King, W., and T. H. Rowney. Remarks on the subject of Eozoön. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiii, pp. 390-396. 1874.

A summary of the chief points in favour of the mineral nature of *Eozoön canadense*.

King, W., and T. H. Rowney. Remarks on the 'Dawn of Life' by Dr. Dawson; to which is added a supplementary note. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xvii, pp. 360-377. 1876.

A critical memoir, stating the objections held by the authors as to the supposed organic origin of *Eozoön*.

König, Charles. Rock-specimens. Supplement to the "Appendix of Captain Parry's Voyage for the Discovery of a North-west Passage, in the years 1819-20", pp. cclxvii-cclvii. London, 1824.

Contains some notices of fossils, and defines as new *Catenipora parryi*, from a limestone discovered in Prince Regent's Inlet.

Koninck, L. de. Description des animaux fossiles que se trouvent dans le terrain Carbonifère de la Belgique. Avec supplément. 1842-44.

The author cites various species of *Productus*, *Strophomena*, *Orthis*, *Spirifer*, *Euomphalus*, and *Goniolites* as occurring in the Palæozoic rocks of North America.

Koninck, L. de. Recherches sur les animaux fossiles. Première partie. Monographie des genres *Productus* et *Chonetes*. 4°. pp. 246, with 20 plates. Liège, 1847.

Describes *Chonetes shumardiana* De Kon. from the Carboniferous of Kentucky, and cites 7 species of *Productus* and 5 species of *Chonetes* as occurring in North America.

Koninck, L. de. Recherches sur les animaux fossiles. Deuxième partie. Monographie des fossiles Carbonifères de la Carinthie. 1872.

Cites a number of Brachiopods and *Bellerophon levii* as occurring in the Carboniferous strata of North America.

Koninck, L. de. Nouvelles recherches sur les animaux fossiles du Terrain Carbonifère de la Belgique. Première partie. Bruxelles, 1872.

The author cites several Corals as occurring in the Carboniferous rocks of North America. He identifies the *Lithostrotion ? californiense* of Meek with *Lonsdaleia rugosa* Martin, and he shows that the *Sphenopoterium* of Meek and Worthen is identical with the previously described *Palaecis* of Jules Haime.

Koninck, L. de, and H. Le Hon. Monographie des Crinoides Carbonifères de la Belgique. 1854.

Cites *Platycrinus planus* Owen and Shumard.

Laspeyres, H. Das fossile Phyllopoden-Genus *Leaia*, R. Jones. < *Zeitschr. der Deutsch. Geol. Ges.*, vol. xxii, pp. 733-746. 1870.

The author describes and figures *Leaia leidyi*, and examines into the structure and relations of *Leaia* and its known species.

Lesueur, C. A. Description de plusieurs animaux appartenant aux Polyptéris lamellifères de M. le Chevalier de Lamarck. < *Mém. du Muséum*, vol. vi, pp. 271-299, pls. xv, xvi, 1820.

This memoir deals principally with the living Corals of the West Indies. In an appendix, however, the author treats of the "Caryophyllites fossiles que l'on trouve aux États-Unis d'Amérique", and describes three Devonian forms of *Zaphrentis*, under the names of *Caryophyllia gigantea*, *C. pulmonea*, and *O. cornicula*.

Lindström, Gustav. On the affinities of the Anthozoa tabulata. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xviii, pp. 1-17. 1876. [Translated from *Öfversigt af Kongl. Vetenskaps-Akad. Förhandl. Stockholm*, 1873.]

Amongst American forms of Tabulate Corals specially noticed by the author may be mentioned *Ceramopora imbricata* Hall and *Trematopora ostiolata* Hall, and critical remarks are also made upon the affinities of *Callopora* Hall, *Cladopora* Hall, *Constellaria* Dana, *Cyathophora* Dale Owen, *Tetradium* Dana, &c.

Logan, W. E. On the packing of the ice in the river St. Lawrence; the occurrence of landslips in the modern deposits of its valley; and the existence of Marine Shells in them and on the mountain of Montreal. < *Quart. Journ. Geol. Soc. Lond.*, vol. ii, pp. 422-432. 1846.

At the close of this memoir, the author considers the Post-Pliocene deposits of the neighbourhood of Montreal, indicating their extension to a height of 460 feet above the level of the sea, and giving a list of five shells found therein.

Logan, W. E. On the occurrence of a track and footprints of an animal in the Potsdam Sandstone of Lower Canada. < *Quart. Journ. Geol. Soc. Lond.*, vol. vii, pp. 247-250, with section. 1851.

This paper deals principally with the geological horizon of the strata containing the footprints in question (*Protichnites*).

Logan, W. E. On the footprints occurring in the Potsdam Sandstone of Canada. < *Quart. Journ. Geol. Soc. Lond.*, vol. viii, pls. vi-viii. 1852.

Gives a full account of the geology of the district where the footprints (*Protichnites*) occur, with lists of the fossils found in the associated strata.

Logan, W. E. On the track of an animal lately found in the Potsdam Formation. < *Canad. Nat.*, vol. v, pp. 279-285, with 5 engravings. 1860.

Describes and figures *Climactichnites wilsoni*, and gives details as to the geological features and position of the beds in which these remarkable tracks occur.

Logan, W. E. Remarks on the Fauna of the Quebec Group of Rocks, and the Primordial Zone of Canada, addressed to Mr. Joachim Barrande. < *Canad. Nat.*, vol. v, pp. 472-477, 1860; and < *Canad. Journ.*, new ser., vol. vi, pp. 40-46, 1861.

Discusses the characters of the fossils of the Quebec Group, with special reference to the stratigraphical position of this series of deposits.

Logan, W. E. On the Rocks of the Quebec Group at Point Lévis. [In a letter addressed to M. Barrande.] < *Canad. Nat.*, vol. viii, pp. 183-194. 1863.

Contains lists of the fossils, and notes thereon.

Logan, W. E. On the occurrence of organic remains in the Laurentian Rocks of Canada. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxi, pp. 45-50. 1865.

This memoir is a geological one, occupied with a general description of the Laurentian Rocks of Canada, illustrated by sections. The author, however, gives an account of the discovery of *Eozoön* in the Lower Laurentian Limestone, and describes the general mode of occurrence of, and the appearance presented by, the specimens.

Logan, W. E. On the occurrence of organic remains in the Laurentian Rocks of Canada. < *Canad. Nat.*, new ser., vol. ii, pp. 92-99. 1867.

A reprint from the *Quart. Journ. Geol. Soc. Lond.*, 1865, with some additional notes.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 113

Logan, W. E. On new specimens of *Eozoön*. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxiii, pp. 253-257. 1867.

This is a geological memoir, but it is of interest to the palaeontologist as giving a detailed account of the precise geological position of the bed from which was obtained the least altered example of *Eozoön canadense* (the "Tudor specimen") as yet known to science.

Lonsdale, William. Account of twenty-six species of Polyparia, obtained from the Eocene Tertiary Formation of North America. < *Quart. Journ. Geol. Soc. Lond.*, vol. i, pp. 509-533, with 17 engravings. 1845.

The specimens described in this memoir were collected by Sir Charles Lyell, and consist partly of true Corals and partly of *Polyzoa*. Five species of Corals and 11 of *Polyzoa* are described as new.

Lonsdale, William. Account of six species of Polyparia obtained from Timber Creek, New Jersey. < *Quart. Journ. Geol. Soc. Lond.*, vol. i, pp. 65-75, with 6 engravings. 1845.

This paper is an appendix to a memoir by Sir Charles Lyell describing the Cretaceous strata of New Jersey, &c. (*Quart. Journ. Geol. Soc.*, vol. i, p. 55). The species described and figured are *Montlivaltia atlantica* Morton, and, amongst Polyzoans, *Idmonea contortilis* Lonsd., *Tubulipora megara* Lonsd., *Cellepora tubulata* Lonsd., *Escharina sagena* Morton, and *Eschara digitata* Morton.

Lonsdale, William. Account of ten species of Polyparia obtained from the Miocene Tertiary Formations of North America. < *Quart. Journ. Geol. Soc. Lond.*, vol. i, pp. 495-509, with 10 engravings. 1845.

The fossils here described were collected by Sir Charles Lyell, and seven of the ten species which form the subject of the paper are Polyzoans. Seven species are described as new.

Lyell, [Sir] Charles. Remarks on some fossil and recent shells, collected by Captain Bayfield, R. N. < *Proc. Geol. Soc. Lond.*, vol. iii, pp. 119-120. 1839.

The author describes a collection of shells obtained from the Post-Pliocene deposits of Beauport, near Quebec. The resemblance of these shells to those of the shells of Uddevalla in Sweden is noticed, and they are further compared with the species living in the Gulf of St. Lawrence.

Lyell, [Sir] Charles. On the Tertiary Formations and their connection with the Chalk in Virginia and other parts of the United States. < *Proc. Geol. Soc. Lond.*, vol. iii, pp. 735-742. 1839.

Contains notes upon the fossils, together with lists of the species collected.

Lyell, [Sir] Charles. On the Tertiary strata of the Island of Martha's Vineyard in Massachusetts. < *Proc. Geol. Soc. Lond.*, vol. iv, pp. 31-33. 1840.

Contains notes on the fossils,

Lyell, [Sir] Charles. Remarks on some fossil and recent shells, collected by Captain Bayfield, R. N., in Canada. < *Trans. Geol. Soc. Lond.*, ser. 2, vol. vi, pp. 135-141, pl. xvi. 1842.

Contains lists of the Post-Pliocene shells of the neighbourhood of Quebec, with descriptive and general remarks thereon. The author compares these shells with those now living in the Gulf of St. Lawrence, and indicates their resemblance to the shells of the Glacial deposits of Uddevalla in Sweden.

114 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

- Lyell, [Sir] Charles.** Travels in North America; with geological observations on the United States, Canada, and Nova Scotia. 2 vols. 8°. With maps and illustrations. London, 1845.

The author gives numerous notes on the fossils which he collected in his travels, often with lists of species, and with many observations, comparing the forms collected with those found in corresponding formations in Europe.

- Lyell, [Sir] Charles.** Notes on the Cretaceous strata of New Jersey, and other parts of the United States bordering the Atlantic. < *Quart. Journ. Geol. Soc. Lond.*, vol. i, pp. 55-60. 1845.

This memoir, though principally geological, contains various palaeontological notes. The fossils collected were separately described by Prof. Edward Forbes and Mr. Lonsdale (q. v.).

- Lyell, [Sir] Charles.** Observations on the White Limestone and other Eocene or older Tertiary Formations of Virginia, South Carolina, and Georgia. < *Quart. Journ. Geol. Soc. Lond.*, vol. i, pp. 429-442, with 7 woodcuts. 1845.

Contains numerous observations on and lists of the fossils collected, several being figured. *Terebratula wilmingtensis* and *Cerithium georgianum* are described as new species; and Prof. E. Forbes gives a description of a new Echinoid under the name of *Scutella jonesti*.

- Lyell, [Sir] Charles.** On the Miocene Tertiary strata of Maryland, Virginia, and of North and South Carolina. < *Quart. Journ. Geol. Soc. Lond.*, vol. i, pp. 411-429, with 2 engravings. 1845.

The memoir contains numerous palaeontological notes and lists of fossils. Lists of shells are given showing the number of Miocene species still existing, the species common to the American and European Miocene, &c. Prof. E. Forbes gives descriptions, accompanied with figures, of two new Echinoids (viz, *Amphidetus virginianus* and *Echinus rufusii*). A list of the fossil Corals is given, and a note from Mr. Lonsdale is appended dealing with the indications of climate afforded by the Miocene Corals of Virginia.

- Lyell, [Sir] Charles.** On the newer deposits of the Southern States of North America. < *Quart. Journ. Geol. Soc. Lond.*, vol. ii, pp. 405-410. 1846.

Besides scattered observations on various Invertebrate fossils met with, the author notes the occurrence on the shores of the Bay of Mobile of inland deposits of the shells of *Gnathodon cuneatus*.

- Lyell, [Sir] Charles.** On the structure and probable age of the coal-field of James River, near Richmond, Virginia. < *Quart. Journ. Geol. Soc. Lond.*, vol. iii, pp. 261-280. 1847.

At pp. 274, 275, of this memoir, the author describes and figures a small *Estheria* [*Postdonomya*] as occurring in the Richmond strata referred to, and points out that the occurrence of these fossils would lead to the conclusion that the Richmond coal-field is of Triassic age.

- Lyell, [Sir] Charles.** On the relative age and position of the so-called Nummulite Limestone of Alabama. < *Quart. Journ. Geol. Soc. Lond.*, vol. iv, pp. 10-16. 1848.

Numerous fossils are alluded to as occurring in the strata in question, and the memoir contains notes from Edward Forbes and Alcide D'Orbigny as to the zoological position of *Orbitoides* [*Nummulites*] *mantelli*.

- Lyell, Sir Charles, and J. W. Dawson.** On the remains of a reptile (*Dendroperon acadianum*, Wyman & Owen) and of a land-shell discov-

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 115

ered in the interior of an erect fossil tree in the Coal-Measures of Nova Scotia. < *Quart. Journ. Geol. Soc. Lond.*, vol. ix, pp. 58-63, pls. ii-iv. 1853.

This memoir contains a description, with figures, of the first discovered specimen of the little Carboniferous land-shell since well known under the name of *Pupa* (*Dendropupa*) *vestusta*.

Marcou, Jules. Résumé explicatif d'une carte géologique des États-Unis et des provinces anglaises de l'Amérique du Nord, avec un profil géologique allant de la vallée du Mississippi aux côtes du Pacifique, et une planche de fossiles. < *Bull. de la Soc. Géol. de France*, vol. xii, pp. 813-936, pl. xxi and map. 1856.

This memoir contains lists of the fossils from the Lower Silurian to the Tertiary inclusive. Some Cretaceous *Ostreidae* are figured.

Marcou, Jules. Geology of North America; with two reports on the prairies of Arkansas and Texas, the Rocky Mountains of New Mexico, and the Sierra Nevada of California. 1 vol. 4°. pp. 144, with 7 plates of fossils. Zurich, 1858. X

Chapter III of this work (pp. 32-53) is devoted to descriptions of fossils collected by the author from the Tertiary, Secondary, and Palæozoic deposits of the regions examined by him. *Ammonites shumardi*, *A. belknapii*, *A. novi-mexicani*, *Hamites fremonti*, *Inoceramus lerouzi*, *Isocardia washita*, *Holaster comanchesii*, *Orthoceras nova-mexicana*, *Myalina apachesii*, *Productus delawarei*, *Orthis pecosii*, *Spirifer rocky-montani*, *Terebratula rocky-montana*, *T. mormonii*, and *T. uta* are described as new species.

Marcou, Jules. Une reconnaissance géologique au Nébraska. < *Bull. de la Soc. Géol. de France*, 2e sér., vol. xxi, pp. 132-147. 1864.

Contains notes on the fossils.

Marcou, Jules. Le Terrain Crétacé des environs de Sioux-City, de la mission des Omaha et de Tekama, sur les bords du Missouri. < *Bull. de la Soc. Géol. de France*, ser. 2, vol. xxiv, pp. 56-71, pl. i. 1867.

The author gives some notes on the Invertebrate fossils of the Cretaceous deposits of Sioux City, Iowa.

Marcou, Jules. Untersuchungen in Californien. < *Verhandl. d. K. K. Geolog. Reichsanstalt*, 1875, pp. 215, 216. K

Notes the occurrence near Fort Tejon of strata with Eocene fossils.

Mathew, G. F. On the Azoic and Palæozoic Rocks of Southern New Brunswick. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxi, pp. 422-434. 1865.

Contains scattered notices of the fossils.

Mathew, G. F. Note sur les Mollusques de la formation Post-Pliocène de l'Acadie. < *Annales de la Soc. Malacologique de Belgique*, vol. ix, pp. 33-49, pl. i. (Translated from the author's MS. by Armand Thielens.) 1874.

Gives a general account of the Post-Pliocene formations, and furnishes notes on a large number of the fossil *Mollusca* which the author has met with in these beds in Acadia.

Meek, F. B. Fossils from the west coast of Kennedy Channel. < *Hayes's "Open Polar Ocean"*, London, 1867, p. 341; and < *Am. Journ. Sci. and Arts*, ser. 2, vol. xl, pp. 31-34.

Describes various fossils collected by Dr. Hayes on the west coast of Kennedy's Channel, from deposits of Lower Helderberg age. *Zaphrentis hayesi* and *Loxonema ? kanei* are described as new species.

116 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Meek, F. B. Geology of the line of the great Pacific Railroad. [In a letter to Dr. J. J. Bigsby.] < *Geological Magazine*, Decade I, vol. vii, pp. 163, 164. 1870.

Notes the fossils obtained by Mr. Clarence King along the line of the Pacific Railway.

Meek, F. B. Remarks on the genus *Lichenocrinus*. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. viii, pp. 341-345. 1871.

A reprint from *Amer. Journ. Sci. and Arts*, 1871.

Meek, F. B. Supplementary note on the genus *Lichenocrinus*. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. ix, pp. 247, 248. 1872.

An additional description of the characters of *Lichenocrinus*, founded on a number of fresh specimens. The author concludes that it is an aberrant type of *Oystoidea*, representing a distinct family.

Meek, F. B., and A. H. Worthen. Notes on some points in the structure and habits of the Palæozoic Crinoidea. < *Canad. Nat.*, new ser., vol. iv, pp. 434-452. 1869.

Reprinted from the *Proc. Acad. Nat. Sci. Phila.*, 1869.

X **Michelin, Hardouin.** Iconographie zoophytologique. Description par localités et terrains des Polypiers fossiles de France et pays environnants. Paris, 1840-47. pp. 348, with 78 plates.

A few American Corals are described in this work.

gm? **Michelin, Hardouin.** Monographie des Clypeâstres fossiles. < *Mém. de la Soc. Géol. de France*, vol. vii, pp. 101-147, pls. ix-xxxvi.

Amongst other forms, the author of this memoir describes various Clypeastroids from the Tertiary formations of the West Indies.

Milne, John. On the rocks of Newfoundland, with notes by Alexander Murray. < *Geol. Mag.*, Decade II, vol. iv, pp. 251-262. 1877.

Mr. Murray's notes to this paper contain various observations on the fossils found in the rocks of Newfoundland.

+ **Milne-Edwards, H.** Histoire naturelle des Crustacés, comprenant l'anatomie, la physiologie, et la classification de ces animaux. [Natural history of Crustacea, comprising their anatomy, physiology, and classification.] 3 vols. 8°. Paris, 1834-40.

Describes various species of American fossil *Crustacea* (Eurypterids and Trilobites).

+ **Milne-Edwards, H.** Histoire naturelle des Coralliaires ou Polypes proprement dits. 3 vols. 8°. Paris, 1857-60.

Describes a number of fossil Corals from North America.

Milne-Edwards, H., and Jules Haime. Mémoire sur les Polypiers appartenant aux groupes naturelles des Zoanthaires perforés et des Zoanthaires tabulés. < *Comptes Rendus*, 1849, t. xxix, pp. 257-263.

The authors found the genus *Dania* for the reception of the North American *D. huronica*.

Milne-Edwards, H., and Jules Haime. A monograph of the British Fossil Corals. Introduction, pp. i-lxxxv. < *Paleontographical Society*, 1850.

In the introduction to their monograph of the British Fossil Corals, the authors found the genera *Anisophyllum*, *Baryphyllum*, *Hallia*, *Aulacophyllum*, *Trochophyllum*, *Hadrophyllum*, and *Eridophyllum*, principally or exclusively for the reception of American species.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 117

Milne-Edwards, H., and Jules Haime. Monographie des Poritides. < *Annales des Sciences Naturelles*, sér. 3, vol. xvi, pp. 21-70. 1850.

The only American Corals described are *Protarea vetusta* Hall, sp.; *P. verneuili* E. & H.; and *Pleurodictyum problematicum* Goldf.

Milne-Edwards, H., and Jules Haime. Monographie des Polypiers fossiles des Terrains Paléozoïques, précédée d'un tableau général de la classification des Polypes. [Monograph of the fossil Corals of the Palæozoic rocks, preceded by a general table of the classification of Polypes.] < *Archives du Muséum*, t. v, pp. 502, with 20 plates. Paris, 1851.

Owing to the classical position of this work amongst treatises dealing with the fossil Corals, it may be useful to subjoin a list of the species founded on American specimens therein described:—*Protarea vetusta* Hall, sp.; *P. verneuili* E. & H.; *Plasmopora foliis* E. & H.; *Lyellia americana* E. & H.; *L. glabra* Dale Owen, sp.; *Favosites favosa* Goldfuss; *F. troostii* E. & H.; *F. mamillaris* Castelnau, sp.; *Emmonsia hemispherica* Yand. & Shum., sp.; *E. ? cylindrica* Mich., sp.; *Michelinia conveza* D'Orb.; *Oratetes filiosa* D'Orb.; *O. dalii* E. & H.; *O. ramosus* D'Orb.; *C. mammulatus* D'Orb.; *O. frondosus* D'Orb.; *O. pavonia* D'Orb.; *O. tuberculatus* E. & H.; *O. rugosus* E. & H.; *O. milleporaceus* E. & H.; *Dania huronica* E. & H.; *Dekayia aspera* E. & H.; *Constellaria antheloidea* Hall, sp.; *Syringopora tabulata* E. & H.; *S. verneuili* E. & H.; *S. verticillata* Goldf.; *S. tubiporoidea* Yand. & Shum.; *Chonostegites clappi* E. & H.; *Columnaria alveolata* Goldf.; *Oyathozonia cynodon* Raf. & Cliff.; *O. profunda* E. & H.; *Zaphrentis cornicula* Lesueur, sp.; *Z. centralis* E. & H.; *Z. rafinesquii* E. & H.; *Z. cliffordana* E. & H.; *Z. dalii* E. & H.; *Z. stokesi* E. & H.; *Z. desori* E. & H.; *Z. spinulosa* E. & H.; *Z. denticulata* Goldf., sp.; *Z. marcouxi* E. & H.; *Z. gigantea* Lesueur, sp.; *Z. rameri* E. & H.; *Z. halli* E. & H.; *Amplexus yandelli* E. & H.; *Anisophyllum agassizi* E. & H.; *Baryphyllum verneuillanum* E. & H.; *Hallia insignis* E. & H.; *Aulacophyllum sulcatum* D'Orb., sp.; *Trochophyllum verneuillanum* E. & H.; *Hadrophyllum orbignyi* E. & H.; *Oyathophyllum lesueuri* E. & H.; *O. rectum* Hall, sp.; *O. distortum* Hall, sp.; *O. rugosum* Hall, sp.; *Streptelasma corniculum* Hall; *S. ? expansa* Hall; *Ptychophyllum stokesi* E. & H.; *Heliohyllum halli* E. & H.; *Olistophyllum danaanum* E. & H.; *Acerularia davidsoni* E. & H.; *Eridophyllum verneuillanum* E. & H.; *E. strictum* E. & H.; *Strombodes pentagonus* Goldf., sp.; *Lithostrotion mamillare* (= *L. canadensis*) Castelnau, sp.; *L. harmonites* E. & H.; *L. stokesi* E. & H.; *Phillipsastræa verneuili* E. & H.; and *Cystiphyllum americanum* E. & H. The new genera founded on American Corals are *Protarea*, *Lyellia*, *Emmonsia*, *Dekayia*, and *Chonostegites*.

Moore, J. Carrick. On some Tertiary beds in the Island of San Domingo, with remarks on the fossils. < *Quart. Journ. Geol. Soc.*, vol. vi, pp. 39-44. 1850.

Contains lists of, and remarks upon, the Invertebrate fossils, principally dealing with the *Mollusca*.

Moore, J. Carrick. On some Tertiary Shells from Jamaica, with a note on the Corals, by P. Martin Duncan, M. B., F. G. S.; and a note on some Nummulinæ and Orbitoides, by Professor T. Rupert Jones, F. G. S. < (*Quart. Journ. Geol. Soc. Lond.*, vol. xix, pp. 510-515. 1863.

Morton, Samuel George. Description of two new species of fossil Echinodermata from the Eocene strata of the United States. < *Ann. and Mag. Nat. Hist.*, ser. 1, vol. xviii, p. 357. 1846.

A reprint from *Silliman's American Journal*, September, 1846.

Murchison, Sir Roderick I. Siluria. A history of the oldest rocks in the British Isles and other countries. 5th ed. 8°. pp. 566, with 41 plates. London, 1872.

Contains notices of American palæozoic fossils (see especially chapter xviii, pp. 424-447).

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Murchison, Sir Roderick I., Edouard de Verneuil, and Count Alexander de Keyserling. *Geology of Russia in Europe and the Ural Mountains.* Vol. ii. Troisième partie, Paléontologie. 4°. pp. 512. London and Paris, 1845.

The authors note the occurrence of many of the Palaeozoic fossils of Russia in deposits of corresponding age in North America.

Murray, Alexander. Report upon the Geological Survey of Newfoundland for the year 1871. St. John's, 1872. pp. 49.

Contains a few notes on the fossils.

Murray, Alexander. Report upon the Geological Survey of Newfoundland for the year 1872. St. John's, 1873. pp. 34.

Contains many notices of the fossils.

Murray, Alexander. Geological Survey of Newfoundland. Report of progress for the year 1873. Montreal, 1873. pp. 47.

Contains notes on the fossils.

Murray, Alexander. Report upon the Geological Survey of Newfoundland for the year 1873. St. John's, 1873. pp. 69.

Contains a few notes on the fossils.

Murray, Alexander. Geological Survey of Newfoundland. Report of progress for the year 1874. St. John's, 1875. pp. 74.

The portion of this report by Mr. James P. Howley, on the Geology of Port-a-Port and St. George's Bay, contains notices of the fossils met with.

Nelson, Richard J. On the Geology of the Bermudas. < *Trans. Geol. Soc. Lond.*, ser. 2, vol. v, pp. 103-123, with 16 engravings. 1840.

Contains numerous observations, dealing with coral-reefs, formation of limestone, chalk, &c., of great interest to the palaeontologist.

Nelson, Richard J. On the Geology of the Bahamas, and on Coral-formations generally. < *Quart. Journ. Geol. Soc. Lond.*, vol. ix, pp. 200-215. [Abstract.] 1853.

Though not strictly palaeontological, Major-General Nelson's memoir contains much matter of the highest interest to the philosophical palaeontologist.

Nicholson, H. Alleyne. Migrations of the Graptolites. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxviii, pp. 217-231. 1872.

Treats in part of the distribution and range of the American species of *Graptolites*.

Nicholson, H. Alleyne. A monograph of the British Graptolitidæ. Part I. General introduction. pp. 133, with 74 engravings. Edinburgh, 1872.

Notices various American forms of *Graptolites*.

Nicholson, H. Alleyne. On *Ortonia*, a new genus of fossil Tubicolar Annelides, with notes on the genus *Tentaculites*. < *Geological Magazine*, Decade I, vol. ix, pp. 446-449, with engraving. 1872.

Founds the genus *Ortonia*, with one species (*O. conica*), for the reception of some Tubicolous *Annelides* from the Cincinnati Group of Ohio.

- Nicholson, H. Alleyne.** On some Fossils from the Quebec Group of Point Lévis, Quebec. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xi, pp. 133-143, with 3 engravings. 1873.

Describes as new species *Dictyonema grandis*, *Tetraraptus approximatus*, *Dawsonia acuminata*, *D. rotunda*, *D. tenuistriata*, and *D. campanulata*. The genus *Dawsonia* is founded for the reception of bodies believed to be the generative capsules of *Graptolites*; and the genus *Clonograptus* (Hall, MS.) is defined.

- Nicholson, H. Alleyne.** Descriptions of two new species of fossil Tubicolar Annelides. < *Geological Magazine*, Decade I, vol. x, pp. 54-57, pl. iv, figs. 2 and 3. 1873.

Describes *Ortonia minor* and *Oonchicolites corrugatus*, from the Cincinnati Group of Ohio.

- Nicholson, H. Alleyne.** Summary of recent researches on the Palæontology of Ontario, with brief descriptions of some new genera. < *Canad. Journ.*, new series, vol. xiv, pp. 125-136. 1873.

Contains a summary of the palæontological researches in the Devonian formations of Ontario carried out by the author in 1873. A list of the fossils identified (160 species) is given, and the Polyzoan genera *Botryllopora*, *Carinopora*, *Teniopora*, and *Cryptopora* are briefly described.

- Nicholson, H. Alleyne.** On the species of Favosites of the Devonian rocks of Western Ontario. < *Canad. Journ.*, new ser., vol. xiv, pp. 38-50. 1873.

A critical account of the genus *Favosites*, and of 6 of the species of this genus recognized by the author in the Devonian deposits of Ontario.

- Nicholson, H. Alleyne.** On some new species of Stromatopora. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xii, pp. 89-95, pl. iv. 1873.

Describes as new species *S. ostiolata* (Guelph formation), and *S. tuberculata*, *S. granulata*, and *S. mammillata* (from the Corniferous Limestone).

- Nicholson, H. Alleyne.** Descriptions of new fossils from the Devonian Rocks of Canada West. < *Geological Magazine*, Decade II, vol. i, pp. 10-16, 54-60, 117-126, 159-163, 197-201, pls. ii, iv, vi, ix, and 3 figures. 1874.

The author describes and figures a number of new fossils from the Devonian rocks of Western Canada, preliminary to the publication of a more extended report on the organic remains of the Corniferous and Hamilton formations of this region. The species described comprise 12 Corals, 2 Brachiopoda, 13 Polyzoa, and 2 Tubicolar Annelides. The two new Polyzoan genera *Botryllopora* and *Teniopora* are defined.

- Nicholson, H. Alleyne.** On *Duncanella*, a new genus of Palæozoic Corals. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiii, pp. 333-335, with 1 engraving. 1874.

Founds the genus *Duncanella* for a simple Coral from the Niagara group of Indiana. The single species *D. borealis* is described.

- Nicholson, H. Alleyne.** On *Columnopora*, a new genus of Tabulate Corals. < *Geological Magazine*, Decade II, vol. i, pp. 253-254, with engraving. 1874.

Founds the genus *Columnopora*, with the single species *C. cribriformis*, for a Coral from the Cincinnati group of Ohio and the corresponding Hudson River formation of Ontario.

120 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Nicholson, H. Alleyne. Descriptions of new fossils from the Devonian rocks of Western Ontario. < *Canad. Nat.*, new ser., vol. vii, pp. 138-147. 1874.

Describes as new *Zaphrentis fenestrata*, *Blotrophylum decorticatum*, *Heliophyllum colbornense*, *Petraia* (?) *logani*, and *Alecto* (?) *canadensis*.

Nicholson, H. Alleyne. On the affinities of the genus *Stromatopora*, with descriptions of two new species. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiii, pp. 4-13, with 3 engravings. 1874.

Refers *Stromatopora* to the *Calcispongia*. The new species described are *S.* [*Oaunopora*] *perforata* and *S. hindei*.

Nicholson, H. Alleyne. Descriptions of two new genera and species of Polyzoa from the Devonian rocks. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiii, pp. 77-85, with 2 engravings. 1874.

Describes the new genera *Cryptopora* and *Carinopora* as aberrant members of the *Fenestellida*. The known species, viz, *Cryptopora mirabilis* and *Carinopora hindei*, are from the Corniferous Limestone.

Nicholson, H. Alleyne. Descriptions of species of *Chaetetes* from the Lower Silurian rocks of North America. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxx, pp. 499-515, pls. xxix, xxx. 1874.

Treats of the species of *Chaetetes* which the author had met with in the Cincinnati Group of Ohio and the Hudson River and Trenton formations of Canada. Nineteen species are recognized, of which several are new.

Nicholson, H. Alleyne. Report upon the Palæontology of the Province of Ontario. Presented to the Legislative Assembly by command of His Excellency the Lieutenant-Governor. Toronto, 1874. 8°. pp. 133, with 8 plates and 58 woodcuts.

In the introduction to this report, the author reviews the Devonian strata of the Province of Ontario, stratigraphically and as regards their palæontological relations. The remainder of the work is occupied with descriptions of 160 species of fossils from the Corniferous and Hamilton formations, comprising 6 species of *Protozoa*, 72 species of *Ocellenterata*, 43 species of *Brachiopoda*, 19 species of *Polyzoa*, 1 species of *Lamelli-branchiata*, 1 species of *Pteropoda*, 12 species of *Gasteropoda*, 3 species of *Annelida*, and 4 species of *Crustacea*. Most of the new forms had been previously described by the author, but the following are here described for the first time:—*Olisiophyllum* [*Acrophyllum*] *pluriradiale*, *Heliophyllum proliferum*, *Favosites chapmani*, *Platyceras uniseriale*, *Strophostylus* (?) *subglobosus*, *S.* (?) *ovatus*, *S.* (?) *obliquus*, *Holopea eriensis*, *Helicotoma* (?) *serotina*, and *Syringopora intermedia*.

Nicholson, H. Alleyne. On *Favistella stellata* and *Favistella calicina*; with notes on the affinities of *Favistella* and allied genera. < *Rep. British Assoc. for 1874, Sections*, pp. 89, 90.

The new species *F. calicina* is founded for a Coral from the Hudson River Group of Ontario.

Nicholson, H. Alleyne. Descriptions of species of *Hippothoa* and *Alecto* from the Lower Silurian rocks of Ohio, with a description of *Aulopora arachnoides*, Hall. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xv, pp. 123-127, pl. xi. 1875.

Refers *Alecto inflata* Hall to *Hippothoa*, and describes as new species *Alecto aulopoides*, *A. frondosa* (Jamer, MS.), and *A. confusa*.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 121

Nicholson, H. Alleyne. Descriptions of new species of Polyzoa from the Lower and Upper Silurian rocks of North America. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xv, pp. 177-184, pl. xiv. 1875.

Ptilodictya falciformis, *P. emicrura*, *P. flagellum*, *P. (?) arctipora*, *P. fenestrelliformis*, and *Oerampora ohioensis* are described as new species from the Cincinnati formation, and *Fenestella nervosa* from the Niagara (Guelph) formation of Ohio.

Nicholson, H. Alleyne. Notes on the Gasteropoda of the Guelph formation of Canada. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxxi, pp. 543-551, pl. xxvi, with woodcut. 1875.

Treats of the Gasteropods which the author had collected in the Guelph Limestone of Canada. Sixteen forms are described, of which two (*Murchisonia boylei* and *Holopea ? occidentalis*) are determined as new.

Nicholson, H. Alleyne. Report upon the Palæontology of the Province of Ontario. Printed by order of the Legislative Assembly. Toronto, 1875. 8°. pp. 96, with 4 plates and 45 woodcuts.

This report is a continuation of one published in 1874, and contains an enumeration of 200 species of fossils collected by the author from the Trenton Limestone, Utica Slate, Hudson River formation, Niagara Limestone, Guelph formation, Corniferous Limestone, and Hamilton formation of Western Ontario. To many of the species nothing more than references are given; but descriptions, generally accompanied by figures, are given of all new species, as well as of those which have not been previously thoroughly examined or described in readily accessible works. In addition to a number of species for the first time enumerated as occurring in the Palæozoic deposits of Canada, the following new species are described:—*Ptilodictya falciformis* (Trenton Limestone), *Favistella calicina* (Hudson River Group), *Diplograpsus hudsonicus* (Hudson River Group), *Callopora minutissima* (Hamilton formation), *Stromatopora nulliporoides* (Hamilton), and *Spirorbis spinuliferus* (Hamilton).

Nicholson, H. Alleyne. On the Guelph Limestones of North America and their organic remains. < *Geological Magazine*, Decade II, vol. ii, pp. 343-348. 1875.

Gives a general account of the fossils of the Guelph formation.

Nicholson, H. Alleyne. Descriptions of new species of Cystiphyllum from the Devonian rocks of North America. < *Geological Magazine*, Decade II, vol. ii, pp. 30-33, pl. i. 1875.

The author describes 4 new species of *Cystiphyllum*, 2 (viz. *C. ohioense* and *C. squamosum*) from the Corniferous Limestone of Ohio, and 2 (*C. fruticosum* and *C. superbum*) from the Devonian of Ontario.

Nicholson, H. Alleyne. Descriptions of new species and of a new genus of Polyzoa from the Palæozoic rocks of North America. < *Geological Magazine*, Decade II, vol. ii, pp. 33-38, pl. ii. 1875.

Describes 4 new species of Polyzoa from the Devonian rocks of Canada and 1 (*Retepora trentonensis*) from the Trenton Limestone. The genus *Heterodictya* (with the single species *H. gigantea*) is founded, a form in most respects resembling *Ptilodictya*, but having the cells tabulate.

Nicholson, H. Alleyne. On some of the massive forms of *Chaetetes* from the Lower Silurian. < *Geological Magazine*, Decade II, vol. ii, pp. 175-177. 1875.

Discusses the affinities of *Chaetetes petropolitanus* Pand. and some allied forms, and provisionally suggests the name of *C. undulatus* for lobed and undulated masses, often regarded as a variety of *C. lycoperdon* Say.

122 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Nicholson, H. Alleyne. On the mode of growth and increase amongst the Corals of the Palæozoic period. < *Trans. Royal Soc. Edin.*, vol. xxvii, pp. 237-249, pl. xvii. 1875.

Treats of the general and special peculiarities of growth and non-sexual reproduction exhibited by the Palæozoic Corals. The author's observations have principally reference to American forms.

Nicholson, H. Alleyne. On the bearing of certain Palæontological facts on the Darwinian theory of the origin of species and on the general doctrine of evolution. < *Trans. Vict. Inst.*, vol. ix, p. 307. 1875.

Amongst other subjects, the author examines the chief facts observable as to the succession of life in a series of conformable deposits; the Upper Silurian and Devonian Rocks of North America being selected for this purpose, and the question being specially investigated as regards the *Brachiopoda*.

Nicholson, H. Alleyne. Notes on the Palæozoic Corals of the State of Ohio. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xviii, pp. 85-94, pl. v. 1876.

Gives details as to the microscopic characters of several species of *Obolites*, *Constelleria*, and *Dekayia*. The minute structure of *Streptelasma corniculum* Hall is also described and figured.

Nicholson, H. Alleyne. On the minute structure of the Corals of the genera *Heliophyllum* and *Crepidophyllum*. < *Ann. and Mag. Nat. Hist.*, ser. 5, vol. i, pp. 44-54. 1878.

Describes the microscopical characters of the above genera.

Nicholson, H. Alleyne, and R. Etheridge, jun. Notes on the genus *Alveolites*, Lamarck, and on some allied forms of Palæozoic Corals. < *Journ. Linn. Soc.*, vol. xiii, pp. 353-370, pls. xix, xx. 1877.

Some American Corals are treated of in this memoir. The authors conclude, from a microscopical examination, that *Alveolites fischeri* Billings and *A. frondosa* Nich. from the Devonian of North America are truly referable to the genus *Pachypora* Lindström.

Nicholson, H. Alleyne, and R. Etheridge, jun. Contributions to Micro-Palæontology.—I. On the genus *Tetradium*, Dana, and on a British species of the same. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xx, pp. 161-169, 161-169, with 1 engraving. 1877.

In the first part of this paper, the authors describe fully the microscopic characters of *Tetradium minus* Safford, from the Lower Silurian of Ohio and Canada.

Nicholson, H. Alleyne, and R. Etheridge, jun. On *Ascodictyon*, a new provisional and anomalous genus of Palæozoic fossils. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xix, pp. 463-468, pl. xix. 1877.

The authors propose the generic title of *Ascodictyon* for some singular parasitic organisms, of uncertain affinities, found in the Devonian rocks of North America and the Carboniferous deposits of Britain. Two American species are described under the names of *A. fusiforme* and *A. stellatum*.

Nicholson, H. Alleyne, and R. Etheridge, jun. On the genus *Palaeacis*, and the species occurring in British Carboniferous rocks. < *Ann. and Mag. Nat. Hist.*, ser. 5, vol. i, pp. 206-227, pl. xii. 1878.

The authors deal in part with the American forms of the genus.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 123

Nicholson, H. Alleyne, and G. J. Hinde. Notes on the fossils of the Clinton, Niagara, and Guelph formations of Ontario, with descriptions of new species. *Canad. Journ.*, new ser., vol. xiv, pp. 137-160, with 6 engravings. 1873.

Thirty-five species are recorded from the Clinton formation, including two new forms (*Prilodictya ? punctata* and *Tentaculites neglectus*). From the Niagara formation are enumerated 49 species, including the new forms *Oenites lunata*, *Alveolites niagarensis*, *Asterophyllum gracile* (gen. nov.), *Cannapora annulata*, and *Olathropora intermedia*. Twenty species are recorded from the Guelph formation, the only new species being *Megalomus compressus*.

Nicholson, H. Alleyne, and James Thompson. Descriptions of some new or imperfectly understood forms of Palæozoic Corals. < *Proc. Royal Soc. Edin.*, vol. ix, pp. 149, 150. [Abstract.] 1876-77.

The authors propose the genus *Orepidophyllum* for Corals from the Devonian of Ontario, which possess the general structure of *Heliophyllum*, but have the central tabulate area enclosed by a distinct accessory wall. The genus includes *O. (Diphyphyllum) archiaci* [Bill.], and some of the forms comprised under *O. (Heliophyllum) elegantulum* Nich. The genus *Lindströmia* is proposed for simple Corals from the Devonian of America, apparently referable to the *Aporosa*, and the single species *L. columnaris* is described.

Nordenskiöld, A. E. Bedegjörrelse för en Expedition till Grönland, 1870. ()
< *Svenska Vetenskaps-Akad. Öfversigter, Stockholm*, 1871.

The Danish original of a paper published by the author in the *Geol. Mag.*, Decade I, vol. ix, p. 289. Contains lists of subfossil shells by Lovén.

Nordenskiöld, A. E. Account of an expedition to Greenland in the year 1870. < *Geological Magazine*, Decade I, vol. ix, pp. 299-306, 355-368, 409-427, 449-463, 516-524. 1872.

At p. 411, the author gives a list of subfossil animals, almost exclusively *Mollusca*, collected in Greenland during the expedition of 1870, and determined by Prof. S. Lovén.

Nugent, N. Sketch of the geology of Antigua. < *Trans. Geol. Soc. Lond.*, ser. i, vol. v, pp. 459-469. 1821.

Contains notes on the fossils.

Owen, David Dale. On the geology of the Western States of North America. < *Quart. Journ. Geol. Soc. Lond.*, vol. ii, pp. 433-437, with map. 1846.

This is principally a geological memoir dealing with the States of Illinois, Indiana, Ohio, Kentucky, and Tennessee, but it contains numerous palæontological notes.

Owen, Richard. Description of the impressions on the Potsdam Sandstone discovered by Mr. Logan in Lower Canada. < *Quart. Journ. Geol. Soc. Lond.*, vol. vii, pp. 250-252. 1851.

Gives a description of the footprints found by Logan in the Potsdam Sandstone (see p. 112), and provisionally concludes that they were formed by Chelonians.

Owen, Richard. Description of the impressions and footprints of the Protichnites from the Potsdam Sandstone of Canada. < *Quart. Journ. Geol. Soc. Lond.*, vol. viii, pp. 214-225, pls. ix-xiv, A. 1852.

Describes and figures *Protichnites septem-notatus*, *P. octo-notatus*, *P. latus*, *P. multinotatus*, *P. lineatus*, and *P. alternans*. The general characters of the footprints are discussed, and the author concludes that they were formed by some Crustaceous animal.

124 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Owen, Richard. [Note.] < *Quart. Journ. Geol. Soc. Lond.*, vol. viii, p. 213. 1852.

M. E. Desor having exhibited to the Geological Society of London a slab with foot-prints from the Clinton Group of the State of New York, Professor Owen gives a short note on their characters. They consisted of a double series of prints and a median track.

Paisley, C. H. Notes on the Marine Clays occurring at the railway-cutting on the left bank of the Tattagouch River. < *Canad. Nat.*, new ser., vol. vii, pp. 41-43. 1874.

Contains a list of the fossils determined by Principal Dawson.

Paisley, C. H. On the Post-Pliocene formation near Bathurst, New Brunswick. < *Canad. Nat.*, new ser., vol. vii, pp. 263-270. 1874.

Contains lists of the fossils.

Payen, M. Sur divers fossiles trouvés aux environs de la Basse-Terre (Guadaloupe). [On some fossils from Guadaloupe.] < *Bull. de la Soc. Géol. de France*, 2me sér., t. xx, p. 475. 1863.

Poole, Henry. On the characteristic fossils of the different coal-seams in Nova Scotia. < *Trans. Nova Scotia Inst. Nat. Sci.*, vol. i, part i, pp. 30-45. 1863.

Notifies the occurrence of a few Invertebrates.

Purves, J. C. Esquisse stratigraphique et espèces fossiles de l'île d'Antigua. < *Ann. de la Soc. Malacologique de Belgique*, t. viii, *Bull. des Séances*, pp. xxv-xxviii. 1873.

Gives lists of, and notes on, the fossils.

Reuss, A. E. Die Foraminiferen des Senonischen Grünsandes von New Jersey. Paläontologische Beiträge. < *Sitzungsb. Math.-Naturw. Cl. Kais. Akad. Wiss. Wien*, vol. xlv, pp. 334-340, pl. vii, fig. 6, and pl. viii, fig. 1. 1861.

Describes and figures *Rotalia mortoni* and *Truncatulina dekeyi*.

Richardson, John. Topographical and geological notices. Appendix to "Narrative of a second expedition to the shores of the Polar Sea, in the years 1825, 1826, and 1827, by John Franklin", pp. i-lviii. London, 1828.

Contains notes on the fossils (determined by Mr. Sowerby) collected by the expedition.

Richardson, John. Arctic searching expedition: a journal of a boat-voyage through Rupert's Land and the Arctic Sea, with an appendix on the physical geography of North America. 2 vols. 8°. London, 1851.

Contains notices of the fossils met with during the expedition.

Rink, H. Udsigt over Nord Grønland's Geognosi, isaer med Hensyn til Bjergmassernes mineralogiske Sammensætning. [Sketch of the geognosy of North Greenland, with special reference to the mineralogical composition of the mountain masses.] < *Det Kongelige Danske Videnskabernes Selskabs Skrifter*, ser. v, vol. iii, pp. 73-98. 1867.

This memoir is geological, but the author gives a list of Post-Pliocene shells, determined by Dr. Mörch.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 125

Roemer, Ferdinand. Ueber eine neue Art der Gattung *Blumenbachium* (König) und mehrere unzweifelhafte Spongien in obersilurischen Kalkschichten der Grafschaft Decatur im Staate Tennessee in Nord-America. < *Neues Jahrb. für Min., Geogn., Geol. und Petrefaktenkunde*, Jahrg. 1844. pp. 680-686, pl. ix.

Describes and figures various *Amorphozoa*.

Roemer, Ferdinand. A sketch of the geology of Texas. < *Ann. and Mag. Nat. Hist.*, ser. 1, vol. xix, pp. 426-431. 1847.

A reprint from *Silliman's Journal*, November, 1846. Notes numerous Cretaceous fossils.

Roemer, Ferdinand. Ueber Hall's Palaeontologie des Staates New York. < *Neues Jahrb. für Min., Geogn., Geol. und Petrefaktenkunde*, Jahrg. 1848, pp. 169-178.

A critical review of vol. i of Hall's "Palaeontology of the State of New York".

Roemer, Ferdinand. Ueber gegliederte aus Kalkstückchen zusammengesetzte Tentakeln, oder Pinnulae, auf den sogenannten Ambulakralfeldern der *Pentremiten*. < *Neues Jahrb. für Min., Geogn., Geol. und Petrefaktenkunde*, Jahrg. 1848, pp. 292-296, pl. v A.

The author describes specimens of *Pentremites* found in Alabama, in which jointed tentacles or "pinnulae" are developed upon the ambulacral areas.

Roemer, Ferdinand. Texas. Mit besonderer Rücksicht auf deutsche Auswanderung und die physischen Verhältnisse des Landes mit eigener Beobachtung geschildert; mit einem naturwissenschaftlichen Anhang, und einer topographisch-geognostischen Karte von Texas. Bonn, 1849. pp. 464, with map.

The "naturwissenschaftlicher Anhang" (pp. 392-422) contains descriptions of fossils from the Cretaceous, Carboniferous, and Silurian rocks of Texas.

Roemer, Ferdinand. Ueber ein bisher nicht beschriebenes Exemplar von *Eurypterus* aus Devonischen Schichten des Staates New York in Nord-America. < *Palaeontographica, Beiträge zur Naturgeschichte der Vorwelt*, herausgegeben von Wilh. Dunker und H. von Meyer, Bd. i, pp. 190-193, pl. xxvii. Cassel, 1851.

The author describes and figures a species of *Eurypterus* from the "Water-Lime Group" [not the Devonian] of the State of New York.

Roemer, Ferdinand. Die Kreidebildungen von Texas und ihre organischen Einschlüsse, mit einem die Beschreibung von Versteinerungen aus palaeozoischen und tertiären Schichten enthaltenden Anhang, und mit 11 von C. Hohe nach der Natur auf Stein gezeichneten Tafeln. Bonn, 1852. 4°. pp. 100.

The author gives a general account of the geology of Texas, with special reference to the Cretaceous rocks. A portion of the work (pp. 27-88) is occupied with the description of a large number of Cretaceous fossils; and in an appendix (pp. 88-94) the author enumerates and describes a number of Silurian and Carboniferous fossils.

Roemer, Ferdinand. Ueber *Stephanocrinus*, eine fossile Crinoiden-Gattung aus der Familie der Cystideen. < *Archiv für Naturgeschichte*, Jahrg. xvi, Bd. i, pp. 365-375, t. v. 1856.

Gives a full description of the characters of the genus *Stephanocrinus*, founded on specimens from the Niagara Limestone of the State of New York.

126 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Roemer, Ferdinand. Monographie der fossilen Crinoiden-Familie der Blastoiden und der Gattung Pentrematites im Besondern. < *Archiv für Naturgeschichte*, Jahrg. xvii, Bd. i, pp. 326-397, with 5 plates. 1857.

A monographic revision of the *Blastoidea*.

Roemer, Ferdinand. Dorycrinus, ein neues Crinoiden-Geschlecht aus dem Kohlenkalke Nord-Americas. < *Archiv für Naturgeschichte*, Jahrg. xix, Bd. i, pp. 207-220, pl. x. 1859.

The author establishes the genus *Dorycrinus*, with a single species (*D. mississippiensis* F. Roemer), for the reception of a Crinoid from the Carboniferous Limestone of Warsaw III. The genus is related to *Amphocrinus* and *Actinocrinus*.

Roemer, Ferdinand. Die silurische Fauna des westlichen Tennessee. Eine palæontologische Monographie. [The Silurian Fauna of Western Tennessee. A palæontological monograph.] 4°. pp. 97, with 5 plates. Breslau, 1860.

A large number of Silurian fossils from Tennessee are described in this important work, of which the following species and varieties are described as new:—*Calamopora* (*Favosites*) *forbesi*, var. *discoidea*, *Thecostegites hemisphaericus*, *Fenestella acuticosta*, *Platycrinus tennesseensis*, *Lampteroocrinus tennesseensis*, *Cytocrinus laevis*, *Eucalyptocrinus ramifer*, *Occocrinus bacca*, *Poteroocrinus pisiformis*, *Synbathocrinus tennesseensis*, *Cystocrinus tennesseensis*, *Orthis flexiplica*, *Spirifer niagarensis*, var. *oligoptycha*, *Rhynchonella tennesseensis*, and *Turbo tennesseensis*. Amongst the sponges, the genera *Astylospongia* and *Palæomanon*, and amongst the Crinoids the genera *Lampteroocrinus* and *Cytocrinus*, are defined as new. In a concluding chapter, the author compares the Silurian fauna of Western Tennessee with that of corresponding deposits in other regions in North America and of Europe.

Roemer, Ferdinand. Ueber den Bau von Melonites multipora, ein Echinid des amerikanischen Kohlenkalkes. < *Archiv für Naturgeschichte*, Jahrg. xxi, Bd. i, pp. 312-330, pl. xii. 1861.

A critical analysis of the characters of *Melonites*.

Roemer, Ferdinand. Lethæa paleozoica. Atlas, with 62 plates. Stuttgart, 1876.

The text of this work is not yet published, but the atlas contains figures of many American fossils.

Rogers, William B. On the discovery of Paradoxides in the altered rocks of Eastern Massachusetts. < *Edinburgh New Philosophical Journ.*, new ser., vol. iv, pp. 301-304, 1856.

Records the discovery of *Paradoxides harlani* Green (the locality of which was previously unknown) in the slates of Braintree, near Boston.

Rominger, Carl. On the true nature of Pleurodictyum problematicum. < *Ann. and Mag. Nat. Hist.*, ser. 3, vol. xi, pp. 390-391. 1863.

A reprint from *Silliman's Journal*, January, 1863.

Rössler, A. R. Geologische Untersuchungen in Texas. < *Verhandl. der K. K. Geol. Reichsanstalt, Wien*, 1863, p. 188.

Contains notices of the fossils.

Rottermund, Count de. Report on the exploration of Lakes Superior and Huron. Printed by order of the Legislative Assembly, April, 1856. Ottawa.

Contains notes of the fossils, said to be from Lake Superior, but really derived from drifted boulders of Upper Silurian Limestone. Other notices of fossils seem to be of no value.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 127

Salter, J. W. Journal of a voyage in Baffin's Bay and Barrow Strait in the years 1850-1, performed by H. M. ships "Lady Franklin" and "Sophia", under the command of Mr. William Penny, in search of the missing crews of H. M. ships "Erebus" and "Terror". By Peter C. Sutherland, M.D. London, 1852. 2 vols. 8°. Appendix, pp. cccxviii-ccxxxiii, pls. v and vi.

The author describes a number of *Orustacea*, *Mollusca*, and *Cœlenterates* from the Silurian strata of the neighbourhood of Wellington Channel, &c. The new species described are:—*Orthoceras ommaneyi*, *Strophomena donneti*, *Rhynchonella phoca*, *Strophodes pickthornii*, *S. (?) austini*, *Favistella reticulata*, *F. franklini*, *Columnaria sutherlandi*, *Arachnophyllum richardsoni*, *Rhynchonella mansonii*, and *Calophyllum phragmoceras*.

Salter, J. W. On Arctic Silurian fossils. < *Quart. Journ. Geol. Soc. Lond.*, vol. ix, pp. 312-317. 1853.

Gives lists, with descriptive remarks, of a number of Upper Silurian fossils collected by the Arctic Expedition of 1850-51, chiefly from the entrance of Wellington Channel. The author also notes the occurrence of Pleistocene deposits, with marine shells of existing Arctic species, on Beechey and Cornwallis Islands, up to 500 feet.

Salter, J. W. Arctic Carboniferous fossils, collected by the expedition under Sir E. Belcher, C. B., 1852-54. In the "Last of the Arctic Voyages", by Sir Edward Belcher, C. B. 2 vols. 8°. London, 1855. Vol. ii, pp. 377, 391, pl. xxxvi.

Describes a number of Carboniferous fossils, of which the following are described as new species:—*Fusulina hyperborea*, *Zaphrentis ovibos*, *Olisiphyllum tumulus*, *Syringopora aulopora*, and *Fenestella arctica*.

Salter, J. W. Fossils from the base of the Trenton Limestone. < *Figures and Descriptions of Canadian Organic Remains*, Decade I, Montreal, 1859. pp. 47, pls. i-x.

In this work, Mr. Salter describes a number of fossils, mostly from the Trenton Limestone of Pauquette's Rapids on the Ottawa, in which there is a singular intermixture of the forms proper to the Black River and Chazy limestones with those characteristic of the higher part of the Trenton Group. Eighteen species of Gasteropods are described, referable to *Maclurea*, *Raphistoma*, *Helicotoma* (new subgenus), *Ophileta*, *Murchisonia*, *Cyclonema*, *Trochonema*, *Eunema*, and *Loxonema*, and comprising 12 new species. The characters and affinities of the genera are discussed at length. Two species of *Cyrtoceras*, and 5 of *Otenodonta* (including 2 new species) are described. The characters of *Orthis tricenaria* Conr. are fully treated of; and lastly the author deals with the affinities and structure of the genus *Receptaculites*, referring the fossils of this group to the *Foraminifera*, and placing them in the neighbourhood of *Orbitolites*. Two new species are described, one, *R. occidentalis*, from the Trenton Limestone, and the other, *R. australis*, introduced for comparison, from the Silurian rocks of New South Wales.

Salter, J. W. On the fossils of the Lingula-flags or "Zone Primordiale". < *Quart. Journ. Geol. Soc. Lond.*, vol. xv, pp. 551-555, with 4 engravings. 1859.

Two new species of *Trilobites* are described and figured, viz, *Paradoxides benettii*, from the Primordial beds of Newfoundland, and *Conocephalus antiquatus*, from a boulder of sandstone discovered in Georgia. An imperfect *Trilobite* from the Calcareous Sand-rock of Canada, formerly referred by the author to *Paradoxides*, is now doubtfully placed in *Asaphus*.

128 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Salter, J. W. On some fossil Crustacea from the Coal-Measures and Devonian Rocks of British North America. < *Quart. Journ. Geol. Soc.*, vol. xix, pp. 75-80, figs. 1-12. 1863.

The genus *Amphipeltis*, with one species (*A. paradoxus*), is proposed for a Stomapod (?) Crustacean from the Devonian rocks of New Brunswick. The genus *Diplostylus*, with one species (*D. dawsoni*), is founded for an Amphipod (?) from the Coal-Measures of Nova Scotia. *Euryptus pulicaris* is described as new from the Devonian of New Brunswick, and other unnamed species of the same genus are noted from the Coal-Measures of Nova Scotia. There is also a note (with figures) as to three Lamellibranchs from the Coal-Measures of Nova Scotia, viz, *Anthracomya elongata* Dawson, sp., *A. (Naiadites) levis* Dawson, sp., and *Anthracoptera (Naiadites) carbonaria* Dawson, sp.

Slater, J. W., and E. Billings. On Cyclocystoides, a new genus of Echinodermata from the Lower and Middle Silurian Rocks. < *Figures and Descriptions of Canadian Organic Remains: Decade III.* Montreal, 1858. pp. 86-90, pl. x bis.

The authors found the genus *Cyclocystoides* for some curious Echinoderms, in some respects intermediate between the Cystideans and the Star-fishes. Of the two species described, one (*C. halli* Bill.) is from the Trenton Limestone of Ottawa, and the other (*C. davisi* Salt.) is from the May Hill Sandstone of Presteign, Wales.

Schomburgk, Sir Robert H. The microscopical siliceous Polycystina of Barbados, and their relation to existing animals, as described in a lecture by Professor Ehrenberg of Berlin, delivered before the Royal Academy of Sciences on the 11th February, 1847. < *Ann. and Mag. Nat. Hist.*, ser. 1, vol. xx, pp. 115-127, pls. v and vi. 1847.

Schomburgk, Sir Robert H. The History of Barbados. 8°. pp. 772. London, 1848.

Contains notices of some of the Tertiary fossils, especially of the *Polycystina*. The new species *Scalaria ehrenbergi*, *Nucula packeri*, and *N. schomburgkii* are described by Prof. Edward Forbes.

Schultze, Max. Eozoön canadense. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiii, pp. 324, 326. [From a Report of the Meeting of the "Niederrheinische Gesellschaft für Natur- und Heilkunde" at Bonn, July 7, 1873, in the "Kölner Zeitung", August 14, 1873.] 1874.

A note in which this distinguished naturalist expresses his conviction that "there can be no serious doubt as to the Foraminiferous nature of *Eozoön canadense*".

Scudder, Samuel H. The fossil insects of North America. < *Geological Magazine*, Decade I, vol. v, pp. 172-177, 216-222. 1868.

The author gives a complete *résumé* of the known fossil insects of North America up to date (1868), accompanied by critical remarks on the species, and detailed statements as to the precise stratigraphical position of the remains in question.

Scudder, Samuel H. On the fossil Myriopods of the Coal-formations of Nova Scotia and England. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxv, p. 441. [Abstract.] 1869.

The author recognizes six species of Chilognathous Myriopods in the Coal-Measures, five belonging to *Xylobius*, and one being the type of the new genus *Archikulus*. The family *Archikulidæ* is proposed for the reception of these forms.

Scudder, Samuel H. Two new Carboniferous Cockroaches from the Carboniferous of Cape Breton. < *Canad. Nat.*, new ser., vol. vii, pp. 271, 272, with 2 figures. 1874.

Describes *Blattina bretonensis* and *B. heeri* as new species.

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 129

Soudder, Samuel H. Fossil Palæozoic Insects. < *Geological Magazine*, Decade II, vol. iii, pp. 519, 520. 1876.

Gives a complete list of the Carboniferous Insects of North America, arranged by families.

Sharpe, Daniel. Report on the fossil remains of Mollusca from the Palæozoic formations of the United States contained in the collection of Charles Lyell, Esq.; with remarks on the comparison of the North American formations with those of Europe. < *Quart. Journ. Geol. Soc. Lond.*, vol. iv, pp. 245–281. 1848.

This memoir is principally concerned with the identification of the fossils collected from the Silurian and Devonian Rocks of North America by Sir Charles Lyell, and the determination of such of these as appear to occur also in Europe. An elaborate list of the published species of *Mollusca* recognised in the collection is given, and detailed notes on a number of the species are appended.

Smith, J. F., jun. Note on the more characteristic fossils of the Hudson River Group of Toronto and its environs. < *Canad. Journ.*, new ser., vol. iv, pp. 450–452. 1859.

Stimpson, William. Review of the Northern Buccinums, and remarks on some other northern marine Mollusks. < *Canad. Nat.*, new ser., vol. ii, pp. 364–389. 1867.

Descriptions of the northern species of *Buccinum*, including the forms found in the Post-Pliocene deposits of North America.

Stokes, Charles. On some species of Orthocerata. < *Proc. Geol. Soc. Lond.*, vol. ii, pp. 688–690. 1838.

Treats of the *Orthoceratites* found by Dr. Bigsby and other observers in Canada, and by various explorers in the Arctic regions. The generic types *Ormoceras* and *Huronia* are founded and defined, and the other forms are referred to *Actinoceras*.

Stokes, Charles. On some species of Orthocerata. < *Trans. Geol. Soc. Lond.*, ser. 2, vol. v, pp. 705–714, pls. lix, lx. 1840.

The specimens described are from Drummond Island and other Canadian localities, as well as from the Arctic regions. The author refers four species, all new, to the group *Actinoceras* Bronn., and describes three new species of the group to which he here gives the name of *Ormoceras*. The characters of these groups, and also of *Huronia*, are considered, and the latter is referred to the *Orthoceratidae*.

Thomson, James, and H. Alleyne Nicholson. Contributions to the study of the chief generic types of Palæozoic Corals. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xvii, p. 455. 1876.

In a note, the authors propose and define briefly the genus *Acrophylum* for the reception of *A. (Olistophylum) oneidaense* Bill. and *A. (Olistophylum) pluriradiata* Nich., both from the Corniferous Limestone of Western Ontario.

Toula, Franz. Description of Mesozoic fossils from Kuhn Island. < *Die Zweite Deutsche Nordpolfahrt*, Bd. ii, *Wissenschaftliche Ergebnisse*, p. 497, with 2 plates. Leipzig, 1874.

[Not seen by the writer.] Describes a number of Jurassic fossils from Kuhn Island, of which *Perisphinctes payeri* is new.

Tuomey, M. Discovery of a chambered univalve shell in the Eocene Tertiary of James River, Virginia. < *Ann. and Mag. Nat. Hist.*, ser. 1, vol. x, pp. 156, 157. 1842.

A reprint from *Silliman's American Journal*, July, 1842.

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- Van den Broeck, Ernest.** Rapport sur un mémoire de M. G. F. Matthew intitulé: Notes on the Mollusca of the Post-Pliocene formation in Acadia. < *Ann. de la Soc. Malacologique de Belgique*, t. ix, *Bull. des Séances*, pp. cxliii-eli. 1874.

See the original memoir under G. F. Mathew.

- Verneuil, Édouard Pouletier de.** Sur un Orthocératite gigantesque de l'Amérique. < *Bull. de la Soc. Géol. de France*, vol. iv, pp. 556-559. 1846.

Describes *Orthoceras herculeus* from the Lower Silurian rocks of the United States.

- Verneuil, Édouard Pouletier de.** Note sur le parallélisme des roches des dépôts paléozoïques de l'Amérique septentrionale avec ceux de l'Europe, suivi d'un tableau des espèces fossiles communes aux deux continents, avec l'indication des étages où elles se rencontrent, et terminée par un examen critique de chacun de ces espèces. [Note on the parallelism of the Palæozoic rocks of North America with those of Europe, accompanied by a table of the fossil species common to the two continents, together with references to the horizons at which these occur, and a critical examination of each of these species.] < *Bull. de la Soc. Géol. de France*, vol. iv, pp. 646-709. [1846.

The nature of this memoir is sufficiently indicated by its title. A large number of species of fossils is critically examined, and *Grammysia hamiltonensis* is described and figured as new.

- Verrill, A. E.** On the affinities of the Palæozoic Tabulate Corals. < *Ann. and Mag. Nat. Hist.*, ser. 4, vol. ix, pp. 355-364. 1872.

A reprint from the *Amer. Journ. Sci. and Arts*, March, 1872.

- Vilanova y Peira, Juan.** Estructura de las rocas serpentinosas y el Eozoön canadense. < *Soc. Españ. Hist. Nat.*, vol. iii, parts 2 and 3. 1874.

Concludes that *Eozoön canadense* is not the remains of an organism.

- Von Buch, Leopold.** Kreide am oberen Missouri. < *Zeitschrift d. Deutsch. Geol. Ges.*, Bd. v, p. 11. 1853.

A note on Cephalopods from the Cretaceous formation of the Black Hills.

- Whiteaves, J. F.** Notes on the Cretaceous Fossils collected by Mr. James Richardson, at Vancouver and the adjacent islands. < *Geological Survey of Canada: Report of Progress for 1873-74*, pp. 260-268, with 1 plate.

A number of Cephalopods, Gasteropods, and Lamellibranchs are noticed and in part described. The following species are described as new:—*Lucina richardsoni*, *Conchocele cretacea*, *Astarte cardinioides*, *A. vancouverensis*, *Tellina meekiana*, and *Fasciolaria nodulosa*.

- Whiteaves, J. F.** On some invertebrates from the coal-bearing rocks of the Queen Charlotte Islands, collected by Mr. James Richardson in 1872. Mesozoic fossils. Vol. i, part i. pp. 92, pls. i-x, with map and 9 engravings. < *Geological Survey of Canada*. Montreal, 1876.

After a preliminary consideration of the deposits in which the fossils occur, and the general nature of their organic remains, the author proceeds to describe the spe-

II.—PUBLICATIONS MADE IN BRITISH AMERICA, ETC. 131

cies. Many of the specimens were so poorly preserved as not to allow of complete specific determination, and others were identical with previously recorded forms. The following are the new species described:—*Ammonites perezianus*, *A. loganianus*, *A. richardsoni*, *A. skidegatenensis*, *A. carlottensis*, *A. laperousianus*, *A. filocinctus*, *A. cretaceostatus* (prov.), *Amauropsis tenuistriata*, *Pleurotomaria skidegatenensis*, *Martesia* (?) *carinifera*, *Pleuromya* (?) *carlottensis*, *Pholadomya ovuloides*, *Callista* (?) *subtrigona*, *Trigymia diversicostata*, *Meleagrina amygdaloidea*, and *Synceylonema meekiana*. In a concluding chapter, the author considers the palæontological relations and correlation of the Cretaceous deposits of Vancouver, and he arrives at the conclusion that the coal-bearing rocks of Queen Charlotte Islands, from which the fossils described were collected, can hardly be older than the Upper Jurassic or later than the Middle Cretaceous.

Woodward, Henry Note on the palpus and other appendages of *Asaphus*, from the Trenton Limestone, in the British Museum. < *Quart. Journ. Geol. Soc. Lond.*, vol. xxvi, pp. 436-438, with woodcut. 1870.

The author records the discovery of the jointed palpus of one of the maxillæ in a specimen of *Asaphus platycephalus* from the Trenton Limestone.

Woodward, Henry. Note on a new British Cystidean. < *Geological Magazine*, vol. viii, pp. 71, 72, with engraving. 1871.

A short paper, with a letter from Mr. Billings, pointing out that *Placocystites forbesianus*, described by De Koninck (*Geol. Mag.*, vol. vii, p. 260) as a new British Cystidean, is really identical with *Atelocystites huxleyi* Billings from the Lower Silurian of North America.

Woodward, Henry. On some new Phyllopodous Crustaceans from the Palæozoic rocks. < *Geological Magazine*, vol. viii, pp. 104-107, pl. iii. 1871.

The only American form described is the new *Dithyrocaris belli* from the Middle Devonian of Gaspé.

Woodward, S. P. Some account of *Barrettia*, a new and remarkable fossil shell from the Hippurite Limestone of Jamaica. < *The Geologist*, vol. vi, pp. 372-377, pls. xx, xxi. 1862.

The author describes and figures *Barrettia moniliformis* from the Cretaceous rocks of Jamaica.

Woodward, S. P. A manual of the Mollusca, being a treatise on recent and fossil shells. 3d ed. With an appendix on recent and fossil conchological discoveries, by RALPH TATE. 1875.

The body of this work contains numerous descriptions of American fossil Mollusca, and the chapters on distribution also contain palæontological information on the same subject.

Zaphrinesque and Clifford. Monographie des Turbinolides. < *Annals de Physique de Bruxelles*, 1820, tom. v.

[Not seen by the writer.] Describes various North American fossil Corals (*Zaphrentis phrygia* = *Z. cornicula* Lesueur, sp.; *Turbinolia buceros* = *Zaphrentis gigantea* Lesueur, sp.; *Omphyma verrucosa*). The authors also found the genus *Zaphrentis*.

Zittel, Karl A. Beiträge zur Systematik der fossilen Spongien. [Contributions to a systematic knowledge of fossil Sponges.] < *Neues Jahrbuch für Mineralogie, &c.*, 1877, pp. 40 [original pagination unknown], with 4 plates.

The structure and characters of various North American fossil Sponges are here discussed; and *Astylospongia* Roemer, *Calathium* Bill., (?) *Eospongia* Bill., and (?) *Trachyum* Bill. are referred to the *Hexactinellidæ*.

132 BIBLIOGRAPHY OF INVERTEBRATE PALEONTOLOGY.

Zittel, Karl A., and W. Ph. Schimper. Handbuch der Palaeontologie.
8°. Munich, 1876.

The first part of the first volume of this work (pp. 123, with 56 engravings) deals with the *Protozoa*, and may be more especially mentioned as containing definitions of the genera of *Polycystina* which occur in the "Barbadoes earth".



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